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Shipping Board To Finance Refinery; Awards 25,000,000 Barrel Contract

By Special Correspondent

WASHINGTON, Aug. 2

THE United States Shipping Board has assured itself of a supply of fuel oil for its vessels for the coming year and possibly for three years, and has agreed to finance the building of a refinery at New Orleans to the extent of $2,000,000, on similar terms to those made by Secretary Daniels with Cochrane, Harper & Company. Thru accepting bids offered by the Atlantic Refining Company, the Midco Mexico Company (subsidiary of the Midco Petroleum Company) and the Gulf Refining Company, the Shipping Board is to receive over 8,000,000 barrels, but by far the greater portion of the total contracted for, amounting roughly to 25,000,000 barrels, was obtained thru a private deal with the Standard Oil Company of New Jersey. The Standard agreed to furnish a little over 15,000,000 barrels.

The terms and amounts of oil to be furnished by the three successful bidders are given as follows in a statement by the Shipping Board:

"**Atlantic Refining Company,** Philadelphia, 3,000,000 barrels of "C" grade fuel oil at $2.30 per barrel terminal delivery and $2.38½ per barrel barge delivery, Philadelphia, deliveries to be made during the calendar year 1921.

"**Gulf Refining Company,** Pittsburgh, 125,000 barrels of "C" grade fuel oil at $2.10 per barrel terminal delivery and $2.20 per barrel barge delivery at Port Arthur, Texas, deliveries to be made over six months period beginning October 1, 1920.

"**Midco-Mexico Company,** Tulsa, 4,900,000 to 7,000,000 barrels of "C" grade fuel oil at $1.10 per barrel terminal delivery for the first year and $1.25 per barrel terminal delivery for the next two succeeding years at New Orleans, deliveries to start on or about January 1, 1921.

"The Shipping Board agrees to charter to the above bidders necessary tank steamer transportation at the government time charter rate of $6.50 per deadweight ton per month.

15,000,000 Barrels From Standard

On the contract with the Standard of New Jersey the amounts, prices and points of delivery are given in the Shipping Board announcement as follows:

New York—9,300,000 barrels at $2.30 per barrel terminal delivery and $2.40 per barrel barge delivery.

Baltimore—1,500,000 barrels at $2.27½ per barrel terminal delivery and $2.37½ per barrel barge delivery.

Norfolk—3,475,000 barrels at $2.60 per barrel terminal delivery and $2.70 per barrel barge delivery.

Charleston—400,000 barrels at $2.15 terminal delivery per barrel.

New Orleans—1,150,000 barrels at $1.90 per barrel terminal (Baton Rouge) delivery and $2.05 per barrel barge delivery.

The Shipping Board agrees to charter to the Standard Oil Company necessary tank steamer transportation at the government time charter rate of $6.50 per deadweight ton per month.

Altho the board has conveyed the impression that it would need more than 28,000,000 barrels and probably well above 30,000,000 barrels, the 25,000,000 barrels contracted for, it is believed, will cover the requirements because the board is constantly selling ships. Of course, there may be arrangements between the buyers and the board which will require the board to keep them supplied with fuel, but the belief is strong that, if the board obtains the quantity of oil called for by the agreements mentioned, none of its ships will be laid up for lack of fuel.

The Standard of New Jersey was not a bidder at the recent opening of tenders. The fact that it might be ready to do business with the government was only suggested by the fact that G. C. Sheffield, in charge of fuel oil sales for the Standard, was present when the bids were opened and remained for days thereafter in conference with Shipping Board officials.

Refinery at New Orleans

Acceptance of the bid of the Midco-Mexico company means that the Shipping Board is going to promote the addition of another refinery to make demands on the available supply of crude. The agreement calls for the board to lend to the Midco-Mexico $2,000,000 at 7 per cent, secured by the notes of the Mexican subsidiary of the Midco company, which notes are to endorsed by the Midco Petroleum Company.

The refinery is to be built at New Orleans. Repayment of the loan is to be made at the rate of one-half the money the board would otherwise pay to the Midco-Mexico, on the fuel oil first delivered. The deliveries are to begin about the first of next year.

Crude for this contract is to be obtained from the oil acreage of the Midco company in Mexico, which the Tidewater is developing. The estimated potential production is from 7,000,000 to 10,000,000 barrels. The delivery in the first year is to be 4,900,000 barrels and in the second 7,000,000. In the event there should be delay in constructing the refinery, the comany agrees to sell crude to the board at 80 cents a barrel, plus taxes, f. o. b. Mexican port, the board to assume or receive the benefit or debit of one-half any change there may be in Mexican taxes.

The contract which the Midco-Mexico Company is to make puts the board, more or less a la Daniels, into the oil refining business, altho the crude that is to be refined by the Midco-Mexico is a lighter crude than the low grade

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Panuco on which Secretary Daniels contracted with Cochrane, Harper & Company.

The Midco-Mexico made alternative offers, all based on the obtaining of crude from its Mexican acreage by the tidewater company. The Shipping Board did not think it worth while to make public the terms of the alternative offers. Only a few of those who attended the opening of the bids could make either head or tail of the offers as read.

In the event the contracts to be entered into do not result in the board obtaining enough oil to cover its requirements, it will be able to resort to the offers of the following companies: Atlantic Lobos, Interocean and Anglo-American. The bids of all other companies were definitely rejected as follows:

Bids Rejected

Mexican Petroleum Corporation, New York City; France & Canada Oil Transport Company and Swiftsure Oil Transport Company, Incorporated, New York City; Sun Company, Philadelphia; Atlantic Refining Company, Philadelphia (bid at Brunswick, Ga.); Atlantic Gulf Oil Corporation, New York City; Mexican Producing & Refining Company, New York City; Barber Asphalt Paving Company, Philadelphia.

Daniels Drops Seizure Method On Fuel Oil

By Special Correspondent

LOS ANGELES, Aug. 2.—Secretary of the Navy Daniels and his subordinates evidently have made up their minds that the way to obtain fuel oil on the Pacific coast for the navy's ships is to pay the market price for it, or the price at which the oil companies offer to sell it.

This conviction apparently followed the determination of the Standard Oil Company of California, not announced officially, but allowed to be generally understood, that it would follow the attitude adopted some time ago by the Union Oil Company of California of refusing to furnish oil at the arbitrary price offered by the naval officers under pain of seizure of the oil if the demands were not complied with.

The Union some time ago in reply to a demand for oil from the navy refused to furnish it and told the officer making the demand that if he sent ashore a landing party to seize the oil the company would withdraw all its men from the plant and throw on the navy the responsibility of finding the proper tanks and pipe lines, operating the machinery and fueling the ships, and also would hold the navy accountable for any damage that might result to the plant thru the operations of the meddlers.

When the navy some time ago asked for bids on fuel oil from the coast companies only 75 per cent of the required amount was offered. The Standard bid on 30 per cent of the requirements, offering to furnish the oil at $2 a barrel. This was the lowest bid received and it has now been accepted. The price offered by the other companies ranged from market price on day of delivery by the Union, which offered to furnish 25 per cent of the required amount on these terms, to $2.35 cents a barrel for the General Petroleum Company. The Associated did not bid.

After the bids were opened veiled hints were slipped to the Independent companies that it would be well for them to get together and meet the price offered by the Standard. This, however, they are refusing to do on the ground that it would be illegal.

The next move seems to be up to the navy department. Assurances have been given, however, that no further seizures of oil will be attempted.

Change Organization Of Sinclair Oil Corp.

By Special Correspondent

NEW YORK, Aug. 2.—An important change in the organization of the Sinclair Consolidated Oil Corporation has been effected as a result of a meeting of the directorate on Friday, July 30. The board of directors comprised of 20 members was increased to 23. An executive committee of ten and a finance committee of eight were created. The finance committee includes several men who are not directors.

The new directors are C. E. Crawley, who has been in charge of the Mid-Continent production department of the company with offices in Tulsa; W. H. Isom, in charge of the Sinclair Refining operations, formerly stationed in Chicago, but lately attached to the New York office; E. Roger Kemp, of Tulsa, who for many years has been actively engaged in producing oil, both on his own account and for the Sinclair interests. All of these men have been associated with the Sinclair organization from its start.

John A. Spoor of Chicago, chairman of the board of directors of the Chicago Junction Railways and Union Stock Yards Company, and Elisha Walker, of Blair & Company, bankers, of New York, both directors of the Sinclair Consolidated Oil Corporation, will serve on the executive committee. Mr. Walker is also a member of the finance committee. Three members of the executive committee represent the active managment of the organization, President Sinclair, Treasurer Farrell and Vice President Watts.

The finance committee includes four members who are not directors. They are Edward H. Tinker, vice president of the Chase National Bank; Theodore Schultz, 14 Wall Street; G. T. Stanford, general counsel, and P. W. Thirtle, general auditor of the company. The new board of directors consists of the following:

C. A. Braley of Kansas City, vice president of the Sinclair Refining Company since last March; Edward H. Clark of San Francisco and New York; William E. Corey, chairman of the Midvale Steel Company; C. E. Crawley of Tulsa, in charge of Oklahoma production for the Sinclair interests; Joseph M. Cudahy of Chicago, formerly president of the Cudahy Packing Company but vice president of the Sinclair company for several years; J. Fletcher Farrell, treasurer; Samuel L. Fuller of Kissel-Kinnicutt & Company; D. L. Hoober and W. H. Isom, vice presidents; Daniel C. Jackling, director of the Utah Copper Company; E. Roger Kemp, William P. Phillips of J. & W. Seligman & Company; Mark L. Requa of the Independent Oil Producers Agency of California, formerly general director of the Oil Division, U. S. Fuel Administration; E. W. Sinclair, president Exchange National Bank of Tulsa; H. F. Sinclair, president; John A. Spoor of Chicago; Frank Steinhart, president Havana Electric Railroad, Light & Power Company; Colonel William Boyce Thompson of New York, director Federal Reserve Bank and also of the Metropolitan Life Insurance Company; Elisha Walker; A. E. Watts, vice president; Harry Payne Whitney of New York, president Whitney Realty Company and breeder of blooded stock; Albert H. Wiggin, chairman Chase National Bank, New York; R. Thornton Wilson of R. T. Wilson & Co., of New York.

The executive committee is composed of Messrs. Corey, Farrell, Fuller, Sinclair, Spoor, Thompson, Walker, Whitney, Wiggin and Watts. The finance committee consists of Messrs. Farrel, Phillips, Schultz, Sinclair, Tinker, Walker, G. T. Stanford and P. W. Thirtle.

Condemn Strike In S. O. Louisiana Refinery

By Special Correspondent

SHREVEPORT, Aug. 2.—Boiler-makers strike against the Standard Oil Company of Louisiana has been condemned by the Rotary and Kiwanis clubs of Baton Rouge, according to a recent communication from the capitol. The disapproval of the club men was voiced at a joint meeting of the two organizations and congealed into a message to the boiler-makers, which says in part:

> "This strike is not justified and ought to be ended before it paralyzes the vital interests of both city and parish, entailing untold suffering."

A joint committee was appointed from the two clubs to present the boiler-makers with a copy of the resolutions passed at the meeting. Since the strike began on July 21, when 350 boiler-makers quit work, their absence from the plants has caused a decrease in work, resulting in 276 men of other crafts being thrown out of work. This means that some 20 per cent of the employes of the refinery at Baton Rouge have left its employ.

Labor questions are handled at the refinery by the Standard's so-called Industrial Representation Plan which has been in effect and worked with remarkable success since November, 1919. President D. R. Weller is quoted as saying that members of the boiler-makers union have admitted to him that all differences have been adjusted satisfactorily by this system and he is convinced that it is a question of accepting or refusing a "closed shop" contract. The strike was called by the boiler-makers on 30 minutes' notice.

The salesman or refinery assistant you have been looking for may be offering his services in the Oil Industry Exchange this week. Better turn to that page near the back of the book.

Refiners And Railroads Discuss Means Of Improving Transportation

Staff Special
CHICAGO, July 31

FOR the first time since the inauguration of train load shipments of oil and oil products, traffic men of the railways and the oil industry met to check up on the progress made and to discuss with each other the things that have not yet been done.

Incidentally, as pointed out by M. J. Gormley, director of the division of transportation, American Petroleum Institute, who called the conference, it was the first time that representatives of any industry met to discuss mutual problems with transportation men. The idea of such a conference was approved by more than 200 railroad and oil men present, about 70 per cent of them being oil men. Railway representatives included vice presidents, general freight agents and their assistants, terminal superintendents and commercial agents. The oil industry was represented by officers of associations and by traffic men of refineries.

The majority of things that have not been done by the railways, the oil men told them, might be traced to inattention and lack of interest on the part of yard clerks. This lack of interest manifests itself chiefly when attempts to trace cars are made. F. W. Boltz, traffic manager for the National Petroleum Association, with headquarters at Cleveland, told of the trouble he has to get even a reply to his inquiries. Harold Roe, traffic manager for Cosden and Company, Tulsa, said his chief trouble lies in the refusal of clerks to sign billing instructions for the release of unloaded cars and that his company has suffered much delay in the tie-up of empties.

Mr. Gormley corroborated the remarks of the several oil men who dwelt upon the inertia of several of the railways in letting the oil men know where their cars are. He has found since he took over the division of transportation of the Institute that, in nearly every instance, he has to act as "liaison" officer between any tracing department and the various yard clerks who answer Gormley's inquiries about cars.

There is but one way of getting action, Gormley told the oil men while the railroad men listened. That is to find the individual in the employ of any particular railway who is disposed to exert himself in behalf of the shipper and do the complaining to him. In his work as a director of the division of transportation, Gormley has "spotted" the men on most of the roads who are willing to concede that service can be better and are willing to exert themselves to that end. So he takes his woes to them.

Sometimes such an individual happens to be a vice president, sometimes a general freight agent, or in many instances a terminal superintendent. The fellows lower down in the service are always given a chance to do something, but if they fail to try, Gormley finds someone higher up who has retained the old-fashioned idea that customers should be shown a little courtesy and given service. In many cases it is somewhat hard on the man who first failed to stir himself, Gormley recommends this course of action.

This idea of personal contact led to the conference. It is Gormley's idea that shippers and railroad men always will get along better and that things will be speeded up if the two sides are acquainted. When a traffic man loses his temper and starts diverting his shipments to some other line to spite the railroad he has been doing business with, he is not making a start to put his transportation business in smooth working order, Gormley said. It is up to that traffic man to find a friend in the employ of the railway who will take a real interest in his shipments.

"But the man who says that railroad service has not improved since the lines were returned to private control is merely repeating the parrot utterances of those who advocate government control," Gormley said. "On the other hand, the railroad man who says that service can not be improved with the conditions at hand, is incompetent and will have to get out of the business."

Further looking at the railway side of the question, private control is on trial right now, said several of the speakers, among them Samuel O. Dunn, of Railway Age, who spoke first for the railroad men. It is well known, said Dunn, that transportation has not by any means kept up with production, that government operation left the lines in such shape that unscrambling could not be done immediately, yet the sentiment in favor of private control is not as overwhelmingly great at this time as it was the first of March.

"There is a sort of catch-phrase going the rounds among industrial men that service has not been improved since the government let go," said Dunn. "This talk is admirably suited to the purposes of the Plumb Plan League folks who are right now putting out great quantities of printed propaganda, which is not only an attack upon private operation of railways, but upon all the so-called capitalistic system.

"Nationalization of railways would be followed by nationalization of mines and later of every great industry. This is no phantom danger, but is one of the tangible issues of the time."

Dunn said, in agreement with the statement of Fred W. Lehmann, Jr., secretary and counsel of the Western Petroleum Refiners Association, that it is true oil production is being limited by lack of transportation, but that the same thing applies to every industry. In March, he said, the freight movement was 30 per cent greater than in the same month of 1919, and for the first five months of this year was 20 per cent greater than for the same period of 1919 and 7 or 8 per cent greater than in 1918, previously the record year. Transportation began to fall down, beginning with 1910, he said, when the application for a general rate advance was defeated.

The Gormley plan of movement of oil in train lots was commended by several of the speakers, including refinery representatives, and sentiment among those attending the conference was that the plan is here to stay. Some trouble has arisen from time to time at the terminals, and green switchmen sometimes cause inexcusable tie-ups by breaking up trains in transit destined to move out immediately to a distributing center. An idea of the extent of the outlaw switchmen's strike and its present effect was given by Mr. Roberts, of the Pennsylvania Railroad, when he said that in their Chicago yards where they normally employ 675 men, switching crews alone, there are now less than 500 at work and of this number 51 are experienced men. The rest are learning the business.

Railroads representatives were disposed to blame consignees for some of the delay in movement of tank cars. Inadequate unloading facilities keep the cars tied up for days, sometimes weeks. Fred W. Lehmann advised the refiners to go after their customers to unload cars and to refuse to bill the troublesome ones any shipments until they gave assurance that their cars would be promptly returned.

Lehmann suggested to the railroads that they employ refiners to help them take care of this part of their transportation, remarking that he had always observed the refiners knew more about railroading than the railroads do about refining.

The settlement of any transportation question which arises between the refiner and the railroad depends on the refiner's "doing something," Charles E. Ellis, traffic manager of Gulf Oil Corporation, Pittsburgh, said. Too much time is spent in damning the railroads and not enough in getting in touch with the railroad man who will settle the trouble, he said.

There was no discussion of the Gormley schedules, which are now in effect on all railroads except the New York, New Haven and Hartford; the New York Central, the Boston and Maine, and possibly one other. These have expedited tank car movement on some lines far above the 30 miles a day for cars loaded and empty, set as a mark to shoot at by the transportation committee of the American Railroad Association. On one line

Last Minute News Of The Producers

HOUSTON, Aug. 2.—Gulf Refining Company of Louisiana's No. 29 Bright Penn, in the Edgerly pool of south Louisiana, which made a 10,000-barrel maximum flow and drilled itself into salt water, is now cleaning out and is rated a 200 or 300-barrel well. In the Hull pool, Liberty county, Texas, Gulf Production Company's No. 14 Phoenix, the farthest south of the North group of wells, is holding up to about 3,500 barrels, declining from a maximum of about 4,000 barrels.

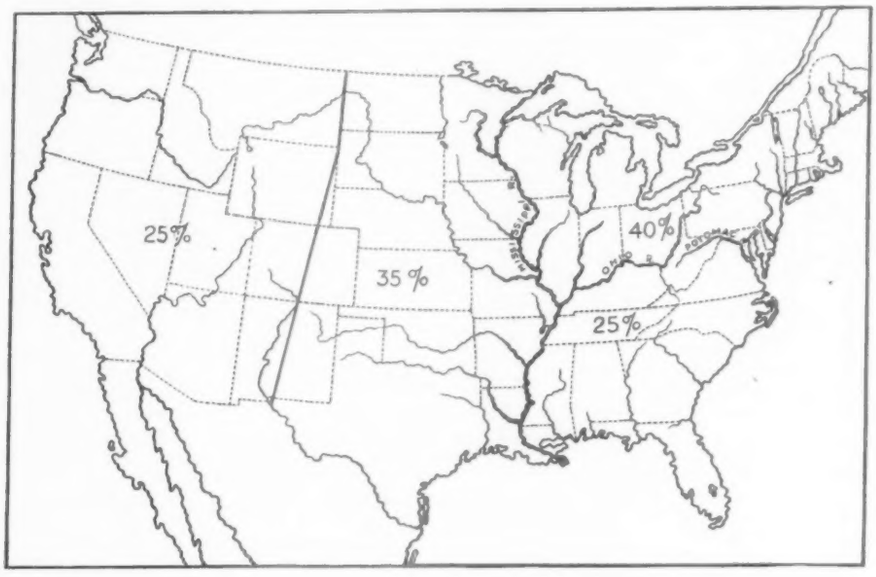
Two deep wildcat abandonments in Texas are the Leonard Petroleum Company's No. 1 Waring, a failure at 3,385 feet in Concho county, and the McKeesport Oil Company's No. 1 C. B. Litlibald, 3,306 feet in Coryell county.

No. 1 Dominguez well of Cia. Inversiones de Aztlan, S. A., in Salvasuche district of Panuco field of Mexico, is about three-quarters of a mile from earlier production and is the only producing well on the west side of Panuco river in that territory. Being an edge well, rated at 15,000 barrels daily heavy oil production, it is considered of more than ordinary importance.

TULSA, Aug. 3.—The Carter Oil Company has purchased from the Texas Company 50 acres in Sec. 27-4S-2W with 5 wells producing 600 barrels daily. Consideration involved is $250,000.

the movement of tank cars under the train load plan has averaged 57 miles a day. The Frisco in the Mid-Continent claims to be making around 90 miles a day but this applies generally on the Frisco movement between Tulsa and St. Louis—a straight haul. Conditions, naturally are considerably more congested in the east than in Mid-Continent and Standard of Indiana territory, hence the big task of traffic managers is in getting their shipments thru here.

Full Percentage Rate Increases To Apply on All Oil Products



By Special Correspondent

WASHINGTON, Aug. 2.

WASHINGTON, Aug. 2.—Oil products will bear their full share in the increases in freight rates announced a few days ago by the Interstate Commerce Commission to add between $1,526,000,000 and $1,600,000,000 to the annual earnings of the railroads to allow them to rehabilitate themselves.

The pleas of representatives of the industry against increases as heavy as other industries must bear, due to the proportionately higher rates oil products now carry, were unavailable. So also were the arguments of a portion of the industry, led by Clifford Thorne, representing a jobbers' and refiners' association, and Fayette B. Dow, Washington representative of the two refiners' associations, for an increase in oil rates of a specific amount. Such an increase was granted in the summer of 1918, when the 25 per cent increase was changed to a maximum of 4.5 cents per hundredweight.

The increase in the territory east of the Mississippi and north of the Ohio and Potomac rivers will be exactly 40 per cent. The railroads asked for 39.75 per cent, but the Commission gave them the odd fraction.

In the southeast, that is south of the Ohio and Potomac rivers, the increase in freight rates will be 25 per cent. The carriers asked for 38.9 per cent.

In that part of the west between the Mississippi river and a diagonal line drawn from and including the boundary line between North Dakota and Montana to El Paso, Tex., the increase is to be 35 per cent.

The increase in that part of the west beyond the diagonal line is to be 25 per cent, the same as in the southeastern corner of the country.

These advances represent the Commission's idea of the relative prosperity or poverty of the four chief districts of the country. The part west of the diagonal line is a new division, made for the purpose of this case. It was created on the theory that the Union Pacific, Southern Pacific, the two northern transcontinental lines and other carriers in that part of the country are relatively so prosperous that they do not need as much as the lines to the south and east, but west of the Mississippi. There is a suspicion, too, that the Commission desired to make the burden on the mountain and Pacific coast regions comparatively light because, when rates were lined up in accordance with the long and short haul rule, they were pretty heavily hit, especially the Pacific coast.

The refiners represented by Frank M. Swacker won out. Those represented by Clifford Thorne and Fayette B. Dow, lost. Swacker, speaking for the refiners who have pipe lines and tank steamers, all of whom have plants near tidewater, said, in effect, that the tidewater refiners were penalized in 1918 because 4.5 cents per hundredweight, the maximum, was much more than 25 per cent on short haul rates which constitute the bulk of freight rates the tidewater refiners have to pay.

According to the declaration of the attorneys for the interior refiners, the increases will be a heavy blow to them because they have comparatively long hauls to market.

The Commission stated a bare outline of the arguments made by the two parts of the oil industry and then said the railroads should carefully consider the effect of the percentage increase, unlimited, and be prepared to make changes if the effect was bad. The fact is, the Commission was so hurried in its consideration of the case that it had to make a stab at giving the railroads money enough to pay the wage increases ordered by McAdoo, Hines and the Railroad Labor Board, which amount to about $1,600,000,000.

The owners of the railroads, since their property was restored to them, have made no increases in wages or added anything to the expense of operating the railroads, other than the infinitesimal sum representing the wages of a few presidents and a few vice presidents, who were fired by McAdoo in May, 1918, when he put each railroad in charge of a federal manager. That increase in expenses is less than one tenth of one per cent.

The burdens which the oil industry and every other industry in the country has to share were created by the men in control while the government was experimenting. The owners of the railroads might have had to make as large increases had the property been left in their hands, but it was not, so the direct cause of the advances in the last two years is the government control.

Since the declaration of war in Europe and including this increase, freight rates will have gone up just about 100 per cent and passenger fares a little more than 70 per cent. If rates all over the country have gone up as much as the first class rate between New York and Chicago, the increase is more than 100 per cent. That rate has gone up from 75 cents per 100 pounds to $1.57, in jumps of five, fifteen, twenty-five and now forty per cent, each succeeding increase being piled on its predecessors.

Two Concrete Tankers Offered To Bidders

WASHINGTON, Aug. 2. — Two Shipping Board tankers, the Palo Alto and the Peralta, under construction at the yards of the San Francisco Shipbuilding Company, Oakland, Cal., are offered for sale, the chairman of the board has announced. Sealed bids will be received at the office of the chairman, on or before 5 o'clock p. m. August 23, the bids to be opened at 10:30 o'clock a. m. August 24. The board reserves the right to reject any or all bids.

Specifications of the vessels are as follows: Length 420 feet, depth 36 feet; loading draft 26 feet; designed deadweight 7,500 tons; boilers 3 Foster W. T., engines one triple expansion 2,800 h. p., fuel, oil, estimated speed, 10½ knots. The vessels are scheduled to be completed about the latter part of August.

Permission to inspect may be obtained from the District Director of Operations at San Francisco. Proposals must include terms on which deferred payments can be made and must be accompanied by a certified check made payable to the United States Shipping Board for 2½ per cent of the amount of the bid. The bids should be addressed to United States Shipping Board, Washington, D. C., and endorsed, "sealed bid for concrete tanker (name of ship)."

California Demand Depletes Stocks Of Gasoline In North Texas

Staff Special
FORT WORTH, Aug. 1

NORTH TEXAS refiners describe gasoline stocks as being practically cleaned out in that territory as a result of purchases made by California distributors, principally the Standard Oil Company of California and the Union Oil Company of California, both of which are moving motor fuel out of the Mid-Continent in train load shipments. They say, however, that greater quantities of gasoline prevail in Oklahoma and Kansas, altho some movement from the two latterly named states has also gone to Pacific Coast territory, including New Mexico, Arizona and Nevada, in addition to California, where the gasoline shortage has been acute.

The marketing organizations operating in the Mid-Continent and the southwest have been responsible for the purchases of the Union, which has either moved or begun to move a total of six trains of 25 cars each out of north Texas in the latter part of July for California. Five of these trains move thru one organization and one train thru the other. The latter, however, is moving for the Union an additional train, which will be split up between New Mexico and Arizona points. Four trains to Pacific territory other than California have been moved by the organization handling the two trains for the Union, the four going to the Standard of California, with three additional to move in August. Two of these go to New Mexico and Arizona points, one to Nevada and one to Arizona.

The other marketing organization referred to is moving three trains from Kansas, three from Oklahoma and five from north Texas for the Union. Standard of California, which has been purchasing in north Texas over a period of months thru still another marketing organization, has been getting quantities of gasoline in this territory thru that source, making up a greater volume of traffic than that currently referred to as recent relief measures.

While it is undoubtedly true that all of the twenty trains purchased by the Union and Standard companies for California, Nevada, New Mexico and Arizona have not moved, and they will go forward over a period of time, advices from Los Angeles ten days ago were to the effect that six train loads for the Union were already under way from Wichita Falls, Texas, and Augusta, Kansas. At least four of the trains consigned to the Standard have already moved from refining points.

Union Buys Navy Specification

It is said in north Texas that the Union has been very particular to obtain new navy specification gasoline, altho it is not stated that all of the quantity obtained has been of that grade. As for the gasoline moving to the Standard, it is described as being for the most part, 58-60, 440 end point, and 56-58, 450 end point, with one train so far shipped of new navy specification. The price paid for this gasoline is said to have been 23½ to 24 cents, f. o. b. refinery, very little of it, however, going at the higher range. On the prevailing freight rate of approximately six and a quarter cents a gallon, the cost of this gasoline delivered to the purchaser will be in excess of 30 cents a gallon, without allowing for any shrinkage or handling costs.

Standard Oil Company of California, in its July Bulletin, refers to its gasoline sales in 1920, which it estimates at 300,000,000 gallons, as against 193,971,950 gallons in 1919 and 152,818,150 gallons in 1918. It further says that the "gasoline shortage will grow less acute as summer wanes; precisely when conditions will be back to normal and supply and demand equalized, is difficult to foretell. With lessening of demand at the end of summer and the supply of crude oil constant—and there is every reason to believe that this supply will remain constant (referring to the California situation) for some time, with possibilities of increase—the shortage should not be of great duration, and a steady improvement should be manifest shortly."

Consumption Exceeds Production

The Bulletin further points out that "at the present rate of production, which may increase somewhat later in the year, the oil fields of California will this year produce a little more than 100,000,000 barrels of crude. Last year production was 101,221,000 barrels.

"At the present rate, consumption this year will be more than 110,000,000 barrels. In other words, the Pacific Coast will this year consume ten million barrels of crude oil more than is produced, aside from the gasoline which is brought to the far west from eastern fields and from Mexico. This company alone is buying 90,000,000 gallons of gasoline east of the Rockies and from Mexico, which goes to points formerly dependent upon California for supplies.

"Stocks constitute the true barometer of the oil industry. Stocks comprise the quantities of crude oil put into storage tanks. As the crude comes from the wells, it is run into these tanks and is drawn off thru the pipe lines to the refineries for the manufacturing processes. The rise and fall of stocks is the measure of consumption, the tangible evidence of the relationship of the demand to the supply.

"What has happened to oil stocks during the first five months of this year clearly indicates the situation. The decline has been precipitate. The year opened with 30,480,323 barrels of crude oil in storage. May closed with stocks at 26,591,897 barrels, the lowest point since August, 1910, and a decrease for the first five months of this year of 3,888,426 barrels. The condition has been a growing one and the oil reserves have steadily diminished for the last six years. In 1914 California stocks amounted to 58,500,000 barrels.

"Several months ago the Standard Oil Company discussed this condition and pointed out that the drain on stocks was all the more serious because 6,000,000 barrels of oil are unavailable, being used for the operation of the pipe lines and being in the storage tanks below points of outlet. Applied to the situation today and it is seen that available stocks are thus reduced to 20,500,000 barrels. During the war the California state council of defense, analyzing the oil situation for war purposes, said that the factor of safety was 10,000,000 barrels. Deducting that sum and we are brought down to a working margin of 10,500,000 barrels of crude oil. This is less than one-fourth of the supply available five years ago. No wonder, then, that the petroleum situation is looked upon as serious.

"One of the ridiculous stories lately circulated is that oil companies are purposely curtailing production, in order to limit the supply, create a shortage and get higher prices. The allegation is easily answered: In January, 1915, there were 6,116 producing oil wells in California; on April 1, 1920, 9,273 such wells; an increase of 3,157 wells. It would seem that there should be, with all these additional wells, a much greater quantity of oil than there is. This is why there is not: The wells of 1915 had an average daily production of 40.96 barrels; those of 1920, 29.64 barrels. In other words, the daily production was 250,000 barrels in 1915, but only 274,000 barrels in 1920, or an increase of but 24,000 barrels, with more than 3,000 additional wells.

"The search for new supplies of oil have never been so intensive. The need is great and the price of crude oil never higher. According to the report of the California state oil and gas supervisor, 400 new wells had been started between January 1 and June 12 of this year against 284 for the same period last year, which indicates a large increase in drilling activity.

"There is also the report that wells are 'capped,' which means, it is assumed, that this is another device to keep production down. 'Capping' a well would be most foolhardy. The oil operator takes oil where he can find it, and gets it out of the ground with all speed. If he does not, his rival on an adjoining property will tap the pool beneath the surface and draw off the oil. This company has capped no wells, and has never heard of other companies doing so.

"New wells of large output are frequently brought in, but while this gives new production it must be remembered that at the same time old wells are falling off, some of them going dry altogether.

"The production of crude oil in California for the first five months of this year was 41,842,730 barrels, which is 167,499 barrels less than the same period of 1919, but 577,000 barrels greater than that of 1918. Therefore, production may be said to be around normal.

"The figures discussed above concern the total production of California, in-

cluding all the results obtained by the 625 companies operating in this state. While production from the state shows a decline from the first five months of last year of 167,000 barrels, the Standard Oil Company's own production shows an increase over last year and not a loss. The company's production for January to May, 1919, was 10,661,844 barrels; for 1920, 11,121,186 barrels, or an increase of 459,342 barrels."

Gasoline and Motor Vehicles

Again it is pointed out that in 1915, "when there was more gasoline than could be used by consumers in this country, there were in the far west—California, Washington, Oregon, Nevada and Arizona—about 239,000 motor vehicles and some 3,000 tractors. Today, there are more than 780,000 motor vehicles in this same area, and at least 25,000 tractors. That tells where the gasoline, available in greater quantities this year than ever before goes. In California alone there are from ninety to a hundred thousand more motor vehicles this year than even a year ago. California state motor vehicle department has some 450,000 registrations, and it is reported that the department has ordered 550,000 license plates for next year's requirements. The condition in California is not unique, it is common to Pacific coast states, to the whole country, in fact. Then there are the stationary gas engines, utilized for many purposes, including the running of pumps for irrigation.

"The fact that last winter was so mild added to the complications. The weather did not interfere with the use of motor cars all thru the winter months, which made it difficult to accumulate reserve supplies for the spring and summer. The lack of rain and snow caused a shortage in water supply in the mountains and cut down the supply of electric power. Hundreds of farmers dependent upon electric power to run their irrigation pumps installed gasoline engines when the power supply failed.

"The following table indicates the remarkable growth in the number of automobiles on the Pacific coast:

	Commercial Cars			Non-Commercial Cars			Total		
		Increase			Increase			Increase	
	No.	No.	Per Cent	No.	No.	Per Cent	No.	No.	Per Cent
Dec. 31, 1915	15,797			221,164			236,691		
Dec. 31, 1916	27,377	11,580	73	301,151	79,987	36	328,528	91,567	39
Dec. 31, 1917	41,747	14,370	52	375,721	74,570	25	417,468	88,940	27
Dec. 31, 1918	63,990	22,243	53	447,930	72,209	19	511,920	94,452	23
Dec. 31, 1919	106,952	42,962	65	641,813	193,883	43	748,765	236,845	46

(Figures do not include 37,359 motor cycles in 1920.)

The increasing number of tractors on the Pacific Coast is equally striking:

	Tractors				Tractors		
		Increase				Increase	
	No.	No.	Per Cent		No.	No.	Per Cent
Dec. 31, 1915....	3,000			Dec. 31, 1918....	12,027	2,495	26
Dec. 31, 1916....	4,100	1,100	37	Dec. 31, 1919....	17,723	5,696	47
Dec. 31, 1917....	9,532	5,432	132	June 1, 1920.....	23,200	5,477	31

Operators Urge Commission To Modify Order Which Stops Casing Shipments

Staff Special

TULSA, July 28.—That the recent action of the Interstate Commerce Commission in placing an embargo on all open top cars except for the use of coal, unless rescinded or modified, will curtail the movement of tubular goods to the Mid-Continent oil field to such an extent that crude oil production will be materially reduced and the present development campaign brought to a standstill, is the opinion of operators and oil well supply men in the Mid-Continent field.

In an effort to secure some relief from the Interstate Commerce Commission's action, the Mid-Continent Oil & Gas Association, thru a committee composed of P. J. Walker, chairman, vice president of the Mid-Continent Oil & Gas Association; J. A. Veasey, Carter Oil Company; James B. Diggs, Gypsy Oil Company and Gulf Pipe Line Company; D. F. Connolly, Wolverine Oil Company; C. J. Wrightsman, Wrightsman Oil Company; Ralph D. Campbell, Cosden & Company, has sent the following telegram to President Wilson, Secretary of the Navy Daniels, Attorney General Palmer, Secretary Payne, of the Department of the Interior; Admiral Benson, chairman of the Shipping Board; Victor Murdock, chairman of the Federal Trade Commission; George Otis Smith, director of the Geological Survey; the director of the Bureau of Mines, and the Interstate Commerce Commission:

"Representing practically all of the oil and gas producers and refiners in Oklahoma, Kansas, Louisiana and Texas, whose membership is also largely identified with the petroleum industry thruout the United States, the Mid-Continent Oil & Gas Association has directed us to respectfully call your attention to the following situation, to wit: That the Interstate Commerce Commission, on July 13, thru Modified Service Order No .7, has placed an embargo on all open top cars suitable for transportation of coal for the period of sixty days ending August 21.

"The result of this order is to deprive oil operators of material necessary to finish operations already commenced, and to commence operations which are necessary to keep up the supply of gasoline, fuel oil, etc., which are now contracted for, and prevents the making of new contracts for the production of gasoline, fuel oil, etc., to enable oil operators to comply with the demands of railroads, navy department, and other governmental agencies for the supply of gasoline, fuel oil and lubricants, and unless modified, will cut down such production until the same will be totally inadequate to supply the demands for the purpose above named and prevent operations of large refineries thruout the country.

"Under this order as it now stands, operators are receiving, and will receive, only 5 per cent of tubular goods essential to carrying on of operations in the field, which will necessarily limit the production and render prices on fuel oil, gasoline, etc., prohibitive."

According to the heads of a number of the large supply houses with offices in Tulsa, the recent ruling by the Interstate Commerce Commission has resulted in all coal cars being headed to the coal mines, which has cut down shipments of tubular material approximately 75 per cent. One executive states that the mills supplying his company with pipe have been unable to make any shipment whatever from June 30 to July 12, as it was impossible to secure any cars during this period. This company and several others are endeavoring to relieve the situation by transporting pipe and casing to Louisville, Ky., and Memphis, Tenn., by barge. This method, however, is not proving satisfactory in all respects, as it is extremely difficult to handle the material in and out of barges owing to inadequate river shipping facilities. Furthermore, the cost of handling runs from $3.50 to $4.50 per ton, according to the accessibilities of the barge over the rail shipment, and there is, of course, considerable delay on account of the slow movement of barges and the delay in the extra handling.

Barge which traversed the Ohio river from Woodlawn, Pa., to Louisville, Ky., with record load of tubular goods for the Mid-Continent oil field. By this means the cargo "ran the blockade" of freight congestion about Pittsburgh and overcame the I. C. C. order dedicating gondola cars to coal movements. The pipe proceeded from Louisville by rail.

Production Goes on During Extension of Plant

The accompanying photograph shows a new building being erected by The Austin Company, with production going along as usual. Note the columns placed through the roof of the older buildings. Such elimination of unproductive time means money saved to the owner.

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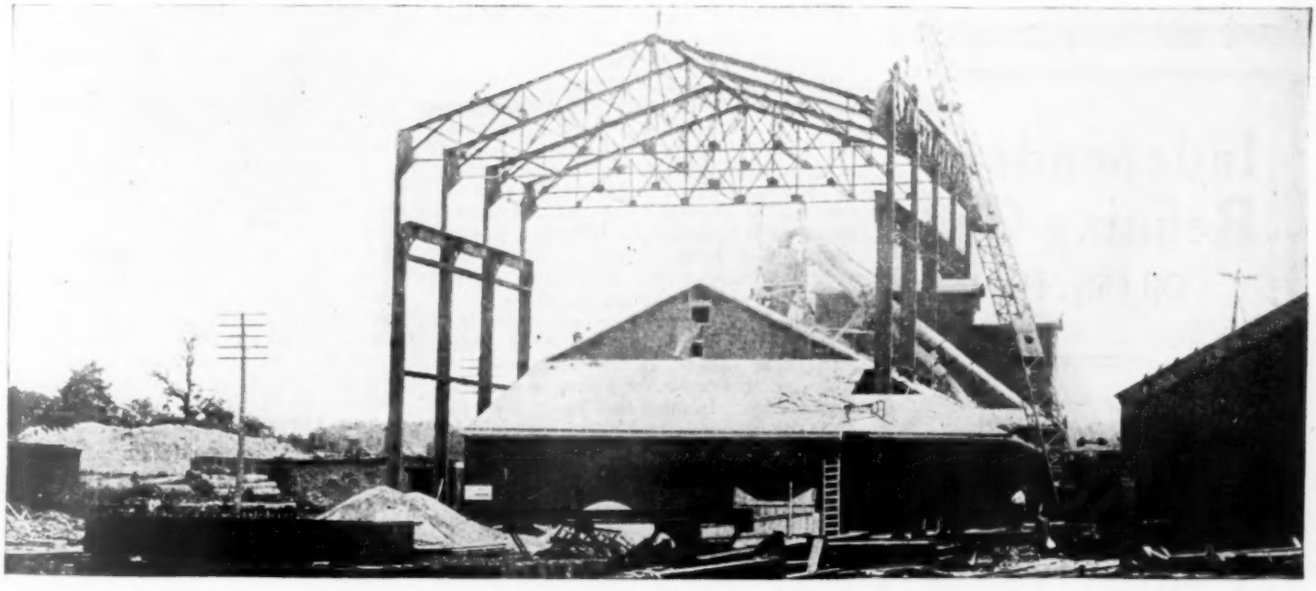

Austin construction under way while production goes on as usual.

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Anglo-French Agreement On Oil May Restrict Opportunities of Americans

By Special Correspondent

WASHINGTON, Aug. 2.—A public move in the world's greatest game in which control of the undeveloped oil resources of the world is the stake, was made in Washington on July 29, when the state department announced that Great Britain and France had concluded an agreement in which the bargain was struck not to compete with each other in the exploitation of the oil resources of their respective territories.

No one knows why the state department made the announcement. The reason for it may appear hereafter. At this time, however, there is only speculation. The state department chose the Associated Press as the agency for putting that important piece of information before the world. It ignored all other agencies. It gave out the bare statement that "the department of state has received information that an Anglo-French petroleum agreement has been published by the British government" and that "the department has made representations to the British government regarding certain provisions that apply to petroleum in mandate territories, and is giving careful consideration to other features of the agreement."

The representations are to the effect that it is the understanding of the United States that the agreement shall not operate to deprive Americans of opportunity to explore for oil in mandate territories, the chief of which, so far as oil is concerned, is Mesopotamia and the German part of the island of Papua.

It was erroneously reported that the department had protested against the agreement. A protest, at this time, would not be in order, it is pointed out. The first necessity is to obtain definite information as to what Britain and France mean by expressions in the report of the agreement, such as zones of influence, possessions and so forth.

If it is learned that such terms are intended to cover mandate territories, then a protest, accompanied by moves that will mean more than the writing of notes, will be in order. If the department, as now operated under the influence of President Wilson, is permitted to go that far, then the foundation will have been laid for effective action by the incoming administration.

If the agreement is intended to mean only those parts of the earth that have been definitely annexed to Britain or France, then there is no ground for a protest. Wider action than that will be necessary to enable Americans to obtain a fair share of the oil in the world, regardless of the flag that waves over the wells.

Uncertainty of Agreement

According to the story which the state department caused to be published, or gave facts enabling the Associated Press to publish it, the agreement extends to all countries where the oil interests of the two nations can be successfully united or might be in conflict. Specifically the agreement deals with the French possessions and the "crown colonies" of Great Britain.

It, however, goes farther in that it provides for co-operation between the two governments in connection with commercial concessions to develop oil wells in Roumania, Asia Minor, Galicia and the territories of the old Russian empire. And therein lies uncertainty.

The old Russian empire territory covers the rich fields which have recently fallen into the hands of the bolshevik armies and some of the "republics" like Georgia, Aberjazain, set up by natives with the aid of British troops and ships while the main fighting was going on on the western front. Asia Minor includes that part of Armenia in which there is nothing, but over which the United States was asked to take a mandate. Later the offer was amended so as to leave to President Wilson the task of delimiting Armenia, which would bring him into conflict with Russia, and then sending American soldiers to defend the Armenians as defined by him.

Roumania is a point of especial interest. The Standard has large interests in that kingdom. German nationals also own much oil property therein. The agreement covers Roumania, seemingly, however, only to the extent that the British and French agree not to compete there with each other. It goes somewhat farther. In it the French and English agree to make common cause in behalf of such of their nationals as seek oil properties in that country, and especially if they seek the property of Germans who might prefer to sell to Americans, if the Roumanian government ever decides to let go of the sequestrated German property.

It is further agreed that whatever of former German property the parties to the agreement secure in that country, shall be divided fifty-fifty between French and English. It is still further agreed that of an Anglo-French corporation should obtain any of the former enemy property then the control shall be British, but opportunity will be afforded Frenchmen to own 25 per cent of the property.

One section of the agreement, as indirectly put out by the state department, leads easily to the assumption that the agreement is intended to cover Mesopotamia and other mandate territory. It provides that if any British company undertakes to develop oil in that part of the former Ottoman empire, the government will see to it that the French government is permitted to obtain at least 25 per cent of the stock for whatever disposition it may desire to make of it, at prices no higher than those paid by other participators in the enterprise. Natives of Mesopotamia, as of right, may acquire 20 per cent of the capital of such companies. That is to say the British government agrees to allow French and Mesopotamians to have 45 per cent of the stock while keeping 55 per cent for either the British government or British subjects.

Before the war the right to develop oil in Mesopotamia was held by the Turkish Petroleum Company, supposed to be a German concern, tho it may be just as German as the oil tank ships belonging to the Standard that England is holding because they flew the German flag. The German shares of that Turkish Petroleum Company are to be taken by France and Great Britain as part of the reparation Germany is to make to them.

According to the declarations made to the state department, presumably by Great

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Britain, the agreement does not affect the rights or interests of other governments, nor does it reserve exclusive rights to the nationals of the agreeing parties.

If the agreement covers only those parts of the earth that have been definitely annexed to Great Britain and France, then the declaration is meaningless, because it is the policy of both governments to reserve oil resources for exploitation by their nationals. Americans are shut out of all territory over which the flags of Britain and France fly, altho French and English companies may operate under the American flag and they are doing so, especially the British companies. Also the nationals of France and Great Britain are free to own as many shares in American companies as they can find money to buy.

It is the provisions about Mesopotamia, Roumania and the self-serving declaration that it reserves no exclusive rights to the nationals of either party that create the suspicion that the agreement is intended as a punch in the ribs of Americans. An agreement that Britain and France have decided not to compete with each other, but to act together to obtain a monopoly of the undeveloped oil resources of the world, by ordinary commercial methods, bargain and sale for that which might be offered, and let the best and most efficient men win, it would not be necessary to specify the territories in which the agreement was binding. Agreements specifying the territories over which they are to be operative, are necessary only in the event that some of the territories are not the property of the contracting party.

It might be necessary to have an agreement for dividing the German property in Mesopotamia and Roumania. That constitutes the loot of the victors. Of course the United States helped some in attaining that victory, but the agreement hands this country nothing.

The contracting parties, if the charge is made that they offer none of the spoils of war to the United States, can truthfully say that they offered some of it even before the Versailles treaty was the cause of a sharp issue in the senate. They did make an offer to the United States to come to an understanding, thru the Supreme Economic Council, with regard to all raw materials. That offer was declined. The Supreme Economic Council is the body, which during the war, put the world on raw material rations. It was to the anti-German coalition what the War Industries Board was to the manufacturers of this country. It decided how much of necessary materials each country might have. Under its orders the United States furnished the "flood of oil" on which the allies rode to victory. Under its orders the United States furnished the coal which enabled France and Italy to keep their armies in the field and their civil populations from freezing to death.

The United States declined on the ground that, inasmuch as peace was about to be restored, there should be no such control over the supply of raw materials. Having declined then, it is assumed France and Great Britain, if accused of hoggishness now, would retort that the United States had its opportunity in the spring of 1919, but threw it away because it was altruistic and interested only in making the world safe for democracy.

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Object To Placing Of M. C. B. Rules In Tariff

NEW YORK, Aug. 2.—Considerable difference of opinion has arisen among tank car owners as to the proposal now before the Interstate Commerce Commission to incorporate in a new tariff giving the tank car owners a 2-cent mileage allowance, the rules of the Master Car Builders Association.

The tariff rule as first proposed by the carriers follows:

"When freight cars of private ownership are furnished by shippers or owners and are used by railroads parties to this tariff for the transportation of freight, mileage will be paid for the use of such cars at the rates shown in the tariff for both loaded and empty movement, provided such cars are properly equipped in accordance with the railroads' rules and the owner conforms to the rules and practices covering the payment of cost of repairs made necessary to the safe movement of such cars on the same basis as applies generally between the railroads in the use of each others cars, also to the usual customs and practices prevailing between railroads in the use of each others equipment."

While the railroad representatives, who met with representatives of tank car owners in New York recently explained that the rule was intended merely to cover the matter of making repairs and claims for damages arising out of delay in making repairs, the rule seemed to be much broader in scope, the last clause apparently being broad enough to permit the pooling of tank cars. Upon the protest of the tank car owners the rule was rephrased so that it should not cover more than was intended.

Many of the tank car owners, however, see a grave menace to the oil industry in an incorporation of the M. C. B. rules in the new tank car tariffs. They are now for the most part helpless to resist wrongful charges for repairs and payment for damages really the fault of the carrier but which are placed as "owners' responsibility" by the railroad representatives and official recognition of the rules as a condition of the increased allowance would make them still more so.

The superintendent of equipment of one of the oil companies operating a large number of tank cars summed up the objections of the car owners as follows:

"This company strenuously objects to any tariff rule that will compel us to abide by the M. C. B. prices and decisions of the arbitration committee covering repairs. First, because the rules and the arbitration committee are dominated by railroad men and second, they are unfair to the private car owner. If the railroads want the private car owners to abide by the M. C. B. rules and regulations we believe that the rules as a whole should be filed with the Interstate Commerce Commission thereby giving the private car owner the opportunity of contesting or filing a complaint governing any unfair ruling that works a hardship upon him.

"Under the existing conditions and particularly if the new tariff rule is adopted by the commission the private car owner has no recourse whatever.

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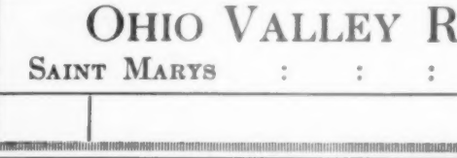

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by Raymond Foss Bacon, Ph. D. and William Allen Hamor, M. A

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Some of the other men prominent in the industry believe that permitting the incorporation of the M. C. B. rules in the tariff granting increased mileage allowance would only serve the purpose that the railroads claim they intend it to serve, that is assuring the prompt payment of charges for repairs, and would not cause additional hardship to the industry.

Initial Trip Proves Economy Of Fuel Oil

Staff Special

NEW YORK, July 30.—A significant statement has been prepared showing the economy effected in a year's operation of the White Star liner "Olympic" on the basis of her initial run on fuel oil. This has been summarized as follows:

(1) 1,000 tons of extra cargo at $25 a ton for 21 trips.	$525,000.00
(2) 300 extra passengers, owing to 153 firemen not required, at $78 for 21 trips	491,400.00
(3) Wages of 153 firemen not required with oil, at $90 per month	165,240.00
(4) Subsistence for 153 men at $45 per month	82,620.00
(5) 133 extra men bunkering coal for 3½ days each voyage at $3 per day....	29,326.50
Total	$1,293,586.50

This takes no account of the amount of time saved in bunkering in port, the cost of oil as compared with coal, which is considerable, the total earnings of the ship in passenger fares and freight for the extra trip, the cost of repeated paintings due to the dust from coal, the added life of the boilers, the wear and tear and renewal of grate bars, coal and ash handling tools and machinery, corrosion of fire-plates, boiler front castings and hanger plates, nor the wear and tear on coal barge equipment and machinery, and corrosion bunkers, and the painting of the fire-room, on all of which it is difficult to place a cash value, which in a year would amount to a very large sum.

It is in the boiler room of the ship that the great difference between coal and oil is most easily observed. In a coal-fired ship the boiler room is inevitably dirty, as soot and cinders are inseparable from coal, and the heat when the furnace doors are opened is almost insufferable. Now the boiler rooms of the steamship "Olympic" are clean and cool and the number of firemen has been reduced by 153. The reduction of the boiler-room force enables the company to carry 300 extra passengers, and the storage of part of the bunkers in skin tanks provides for 1,000 extra tons cargo.

SHREVEPORT, LA., Aug. 2.—W. W. Heard, former governor of Louisiana, has been chosen secretary of the recently created Louisiana Securities Commission, which will have its offices in the courthouse building at New Orleans

Motor Truck Selection And Operation In Oil Distribution

By F. A. Bean

THE acompanying article is the first of a series of six, covering the distribution of petroleum products by motor truck. Mr. Bean, the author, who is consulting engineer of the Wayne Oil Tank & Pump Company, of Fort Wayne, Ind., has made a study of the distribution and sale of oils, particularly gasoline, from the retailer's standpoint.

He will be remembered by readers of **National Petroleum News** for the series of articles published some months since on the design, layout and operation of filling stations, in which the subject was covered in detail. In the present series Mr. Bean goes into detail with regard to figuring costs of delivery, cutting down costs, types of trucks, equipment and operation. Jobbers generally should find many helpful suggestions in the articles which they can apply with profit in their every-day business.—Editor.

UNTIL very recently—within the last three years—the tank trucks used by oil companies have received comparatively little thought and less care.

The result has been that the cost per gallon for delivery to the customer or the filling station has been considerably higher than necessary. There are certain fundamental and basic principles which must be carefully observed or this department of the industry must be an inevitable failure.

The major portion of the blame for this condition rests with the oil companies, altho some of it is chargeable to truck salesmen and to truck tank builders. This has not been malicious or intentional, but is the result of ignorance and a lack of study of operating conditions.

In this connection we feel obliged to quote a portion of two very pertinent paragraphs from an article entitled "Study Haulage," and recently appearing in one of the motor magazines. The first is: "A truck dealer should sell motor transportation and a truck salesman should be a transportation engineer." The second: "Don't go into a prospect's office until you know his transportation problems."

It is quite evident that there is something radically wrong when one company shows a delivery cost in a certain city ranging from two to two and a half cents a gallon, while another company operating under almost identical conditions and opportunities in the same city shows a cost ranging from four-tenths to seven-tenths cent per gallon.

Study Reduces Costs

The manager who has carefully analyzed the various factors entering into the cost of delivering is the one who is delivering at a cent or less per gallon. A number of managers believe they are delivering below the one cent mark because their bookkeeping departments are not given sufficient data and are not taking into account all of the items.

There are a large number of the smaller Independent oil companies who haven't the faintest idea of what their delivery cost is; furthermore, they are not taking any steps to find out, and the writer has talked to some managers who haven't even an idea how to inaugurate a system that will give them the desired information or what items should be taken into account in order to determine what their trucking costs really are. This is not an exaggerated statement.

A high cost of delivery may be due to any one of a number of causes or to a combination of a number of them. Among them are: the use of an improperly designed truck or tank; the use of trucks of a wrong capacity on a certain route; too great a mileage for the gallon delivered, improper routing; excessively high maintenance charges due to over-load; under-tire vehicles, or poor inspection and repair methods and to high operating costs of the truck resulting from poor loading and unloading facilities or from carrying an underload. There is also a great deal chargeable against careless, untrained and generally indifferent chauffeurs.

Let us consider how some of these items affect the final costs.

Every possible item of expense connected with the truck must be taken into account when calculating the cost of delivery per gallon. It necessarily follows that if we can design, operate and maintain our trucks, so that we have reduced the cost of delivery per gallon a fraction of a cent, we have added that same amount to the profits on every gallon we sell. It is necessary before we can make efficient any system for either maintenance or operation that we have the proper trucks.

The first thing necessary is to determine on a specification that will give us the truck with the lowest operating and maintenance charge in this particular line of work.

Lessons of Experience

Experience has already taught practically all truck operators two very important lessons.

The first is that the truck that is cheap in price at the time of purchase rarely develops to be a cheap truck from an operating viewpoint over a period of years.

The second is that in operating a fleet of trucks in either one of a number of cities it is very costly to experiment with several makes of trucks. Using only one make of truck very materially reduces the cost of repairs, and simplifies all the problems of service, the stocking of repair parts, etc. It also has another important feature that a great many truck operators fail to realize; that both passenger cars and trucks are a little bit human in their action, and each make has certain peculiarities. The use of only one make of truck will greatly assist the truck manager, repairmen and drivers to learn these mechanical peculiarities and thus come more nearly to 100 per cent operating efficiency.

The standardization of equipment will help in the solving of the various loading and operating problems; will cut repair shop and repair part stock room space and cost; will cut fuel consumption; will make easier the planning of garages, repair and paint shop, loading racks, etc.; will reduce the labor required at large distributing plants and simplify the accounting system. It will also allow the interchange of bodies on units of like capacity, and make the design of these bodies a much easier problem.

There are a few things in connection with motor trucks as related to the distribution of petroleum products with which we wish to thoroly impregnate the oil man's mind; for this reason we have already made and will continue to make several repetitions of the subject matter in slightly different language.

Not a Cheap Truck

The first thing is the choice of the truck. The oil company has a choice of many good trucks. None of them are wholly bad. Pick a make of truck that will conform to your specification and embodies the best in material and workmanship. This usually means a truck well above the average in cost. See that the manufacturer is one of good financial standing so that your trucks are not in a position to become orphans at the end of two or three years and leave you high and dry for repair parts, or with long waits and excessive charges.

They should have a reasonable number of well stocked service stations in every locality where your trucks will be operated. Keep away from trucks as-

The First Task of a Motor Truck is to deliver its loads to destinations

Experienced motor truck owners know they can *count* on Jumbo Trucks to deliver the goods, trip after trip, month in and month out, in all kinds of weather, under severest operating conditions.

The same strength of design and construction that keeps Jumbo Trucks in constant operation, guarantees low upkeep costs. Jumbo records of more than 30,000 miles without repairs are not unusual.

Write for booklet
"The Jumbo Highway Express"

NELSON MOTOR TRUCK COMPANY, *Saginaw, Mich.*
A complete line of completely equipped trucks 1½ to 4 tons

JUMBO
The Complete Truck

CRYSTAL OIL WORKS
OIL CITY, PA.

For over thirty years we have been supplying our trade with all products of petroleum, including the unexcelled lubricating oils for which Pennsylvania Crude is noted.

Yet throughout all our years of service we have kept pace with progress, not only as regards refining processes but in our methods of doing business.

We will welcome the opportunity of adding your name to our list of regular customers.

sembled from mongrel parts.

The capacity of the trucks to be used will depend entirely upon the territory to be served and the business to be handled.

The sizes which are giving the best average results range from one and a half to three and a half tons.

The three-quarter-ton and one-ton trucks very seldom earn their way at small stations, but have been used to good advantage in making emergency deliveries, when attached to a large fleet of trucks in the larger cities.

The trucks of from four to seven and a half tons capacity have given very good results in large dump load service on good roads and where the routes were of comparatively short mileage.

One thing to be remembered is that on routes where the gallonage will warrant, it is cheaper to operate a five-ton truck than two trucks of half that capacity each.

Some municipalities have already limited and others are considering limiting the capacity of trucks which shall be allowed on the public streets and highways.

Because of the cost of construction and maintenance of highways and streets it is more than probable that trucks of more than five-tons capacity will not be allowed in a great many localities. There is a question among many highway and municipal engineers as to whether the limit of the load allowed on a highway should be based upon the pay load capacity of the vehicle or upon its upsprung weight.

Anticipate your needs in the truck line well in advance. Do not wait until a few days or even weeks before the time you wish to put the finished trucks into service and then expect to get what you want in either chassis or body or expect to get the truck which will give you the best service.

When this course is followed, the result is usually that some truck other than the right one is purchased and the cost paid in after years.

Specifications for Motor Truck Chassis To Be Used in the Distribution of Petroleum Products

All motor truck chassis shall be based on these specifications and shall include all items named herein.

If a tender is made on tank or stake body it shall be made separately and not be included with the bid covering the chassis.

Tires

Chassis shall be equipped with either solid or pneumatic cord truck tires at the option of the purchaser, and shall conform in size to those shown in the tabulated list given below.

When solid tires are specified they shall be of the single, fluted, pressed on type.

When pneumatic tires are specified they shall be of the straight side type.

Wheels

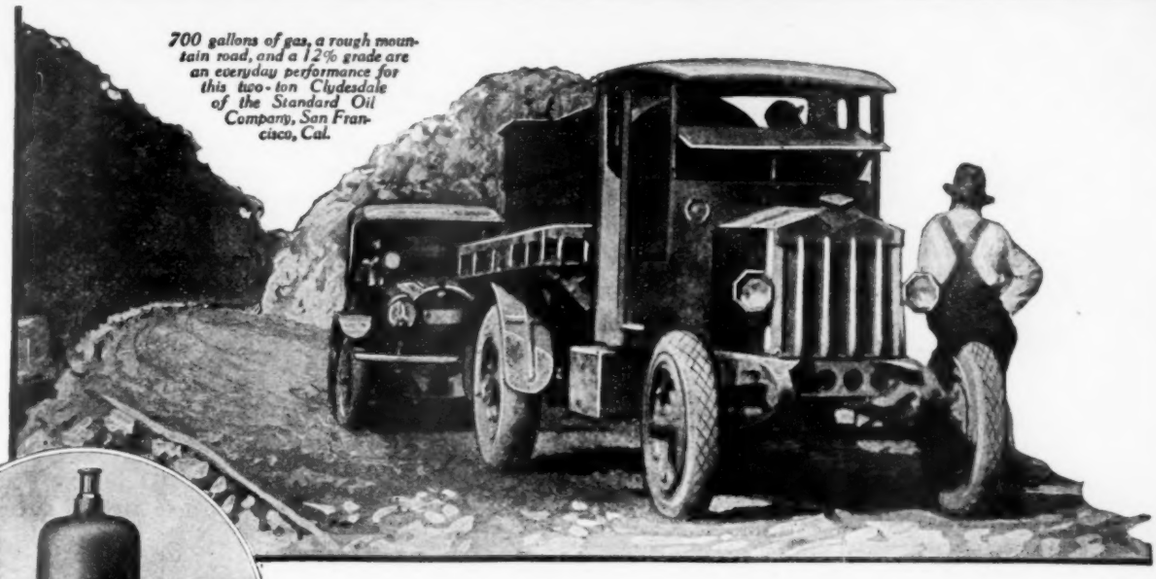
Wheels shall be either wood of the artillery type or solid metal disc type at the option of the purchaser.

Rims

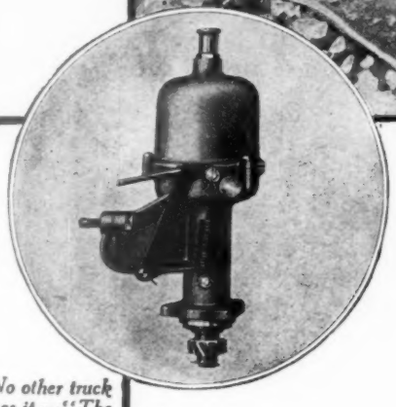
Rims shall be of such size and design as will properly care for the size and type of tires specified.

Anti-Skid Chains

Eight unit anti-skid chains of proper size and with the necessary fastening shall be furnished with each chassis. The fastenings shall be delivered installed on the wheels.



700 gallons of gas, a rough mountain road, and a 12% grade are an everyday performance for this two-ton Clydesdale of the Standard Oil Company, San Francisco, Cal.



No other truck has it—"The Driver Under the Hood"

Without Oil, No Trucks
Without Trucks, No Oil

TO keep the world's goods moving requires oil, and to keep the world's oil moving requires trucks. Petroleum must be sent to every nook and cranny of the country so that wheels may turn and production keep pace with demand.

Some roads are good, many are bad. But the oil companies and their distributors are expected to make deliveries regardless. There must be no let-up in the constant flow of oil from well to consumer.

The Clydesdale truck has been chosen by many refiners for two reasons. First, its sturdy dependability, whether on a concrete highway or a corduroy back road. And second, the Clydesdale Controller which automatically governs the truck speed under all load or road conditions, saving gas, tires and the racking wear on vital parts that results from a racy motor or a jerky clutch.

There's only one way to appreciate the true value of the Clydesdale Controller—have your dealer demonstrate it with yourself on the driver's seat.

THE CLYDESDALE MOTOR TRUCK COMPANY
CLYDE, OHIO

CLYDESDALE
MOTOR TRUCKS

Hubodometer

A hubodometer of approved type shall be furnished and installed on left front wheel.

Governor

A speed governor of approved type shall be attached to the motor and shall be set to such speed as is indicated in the tabulated list given below.

Bumper and Radiator Guard

All chassis shall be equipped with bumper in front and a metal radiator guard, both of approved type.

Transmission Speeds

Each chassis shall have one reverse speed and the number of forward speeds shown on the tabulated list below.

Towing Eyes or Hooks

Each chassis shall be equipped with a towing hook or eye installed on each corner of the frame.

Cabs

Each chassis shall be equipped with a cab (style to be approved by purchaser) of wood or steel construction and equipped with rear window, windshield, side curtains, seat and cushions.

Lighting System

Each chassis shall be equipped with a complete electric lighting system, including 6-volt battery, battery box, generator, two head lights and one tail light, with all wiring in conduit.

Warning Signal

The chassis shall be equipped with an approved electric horn.

Tools

Each chassis shall be equipped with a full set of tools, including a jack of such size as to operate under the truck with which it is furnished, when fully loaded. A tool box of sufficient size to hold all of the tools and securely fastened to the chassis and fitted with a lock and key shall also be furnished.

Tire Pump

When the chassis is to be equipped with pneumatic tires, a tire pump of sufficient capacity shall be installed in connection with the power unit and proper provision made for its operation from the motor.

Drawing

The manufacturer shall submit to the purchaser detailed dimensioned drawing and descriptive matter covering the chassis, motor, horsepower, ignition system, wiring plan, carburetor and size, oiling system, cooling system, wheels, front and rear, type of rims and tires, exact location of muffler and exhaust, gear ratio, chassis weight as regularly equipped by the manufacturer; also the exact weight of all additions made under these specifications, body allowance weight, extreme length over all and extreme width hub to hub, length of frame back of seat, overhang and frame beyond wheel base, frame width, height of frame, at rear without body and with body fully loaded, height from ground to top of cab, length of wheel base, turning radius per cent of load on rear wheels, including body when loaded, a detailed description of all equipment herein specified and showing where and how the same is installed, including the lighting system with wiring diagram, cab, governor, hubodometer, anti-skid chains, bumper, radiator guards and towing eyes, and a list of all equipment, including the regular chassis weight specified by the manufacturer.

Painting

All chassis shall be delivered in the lead unless otherwise specified. When the completed painting is to be done by the truck manufacturer it shall be in accordance with the specifications which will be furnished by the purchaser. A separate bid shall be made to cover the painting.

Truck Specifications

Truck Capacity in Tons	Solid Tires Being Furnished by Various Truck Manufacturers		Recommended Sizes				Governor Speed of Trucks in Miles Per Hour		Number of Transmission Speeds Forward
			Solid		Pneumatic Cords				
	Front	Rear	Front	Rear	Front	Rear	Solid Tires	Pneu. Cords	
¾	30x3 32x3 34x3 36x3 32x3½ 34x4½	34x3½ 36x3½ 32x4 32x4½ 34x4½ 32x5 37x5½	x	x	34x4½	35x5	x	27	3
1	32x3 33x3 34x3 35x3 34x3½ 36x3½ 38x3½ 33x4 36x4 40x4 35x5	34x3½ 36x3½ 32x4 34x4 35x4 36x4 34x5 35x5 36x5 34x6 35x6	x	x	34x4½	36x6	x	25	3
1½	34x3 32x3½ 34x3½ 35x3½ 36x3½ 34x4 36x4 35x5 37x5	36x3½ 32x4 34x4 36x4 34x5 36x5 34x6 36x6 38x6 38x7	36x4	36x6	36x6	38x7	18	22½	3
2	34x3½ 36x3½ 34x4 35x4 36x4 37x4 38x4 35x5 36x5 37x5	38x7 36x7 36x8 40x8 34x10 36x10 34x12 35x12 36x12 38x12 36x14	36x4	36x8	36x6	40x8	16	20	4
2½	34x4 36x4	36x7 34x8 36x8 40x8 46x8 36x12 36x14 38x14	36x5	36x8	38x7	42x9	15	18½	4
3	48x3½ 34x4 36x4 34x5 36x5	36x7 38x8 36x10 40x10 36x14	36x5	36x10	38x7	44x10	14	17	4
3½	36x5 37x5 38x5 36x6 38x7	36x8 42x9 36x10 37x10 38x10 40x10 44x10 36x12	36x5	36x10	xx	xx	12	15	4
4	36x5 38x5 36x6	36x8 36x10 38x10 40x10 36x12 40x12	36x6	40x10	xx	xx	12	14	4
5	34x5 36x5 36x6 37x6 38x6	36x10 37x10 40x10 42x10 48x10 37x12 40x12 42x12	36x6	40x12	xx	xx	12	x	4
5½	36x5 36x6	36x10 40x12 40x14	36x6	40x12	xx	xx	12	x	4
6	36x5 36x6	36x10 36x14 40x14	36x6	40x12	xx	xx	12	x	4
7	36x6 36x7	36x10 40x10 40x14	36x7	40x14	xx	xx	12	x	4
7½	36x6 36x7	40x14	36x7	40x14	xx	xx	12	x	4

THE GREAT EXPANSION of facilities and the efficient organization necessitated by War production developed invaluable experience enabling us to enhance the high quality which always has marked Pierce-Arrow.

THE PRESENT LINE *retains* these distinctive Pierce-Arrow characteristics—durability, long life, easy operation.

It *gains materially* in these vitally important attributes:

Pulling Power—equal to any demand

Gasoline Economy—more miles per gallon

Accessibility—for quick economical repairs

THESE ARE PRIMARY FACTORS in operation and maintenance—the true test of truck economy.

Pierce Arrow

48 of the FIRST FIFTY trucks still running after 9 years' service.

Delivers more work in a given time.

Loses less time on the job and off the job.

Costs less to operate and less to maintain.

Lasts longer, depreciates less, commands a higher resale price.

THE PIERCE-ARROW MOTOR CAR COMPANY, BUFFALO, N. Y.

Trailmobile

Trade-Mark Reg. U. S. Patent Office

The Motorless Motor Truck

Thousands in Use

DIVISION No. 1 Light, one-way four-wheeled Trailmobiles for use with passenger cars or light trucks: 1,250 lbs., ¾-ton, and 1 ton.

DIVISION No. 2 Heavy-duty four-wheeled Trailmobiles for use with trucks: 1½-tons, one-way; 2 tons, 3½-tons and 5 tons reversible and one-way.

DIVISION No. 3 Semi-Trailmobiles: 2½-tons, 4 tons, 6 tons, and 10 tons.

DIVISION No. 4 Pole Trailmobiles: 1½ ton, 3 ton, 5 ton and 7 ton.

Making the Truck Do Double Duty

WHERE Trailmobiles are used in oil distribution the truck does double duty and is twice as profitable. For the Trailmobile doubles its capacity—enables it to take care of a route on which twice as large a supply of oil is required—while it increases the total cost of operation only about 12½ per cent.

That means a bigger return from the investment in equipment, and a more profitable employment of the time of the driver. It cuts distributing costs and makes it possible to maintain prices for finished product at the lower levels which it is to every one's interest to maintain.

In the producing fields Pole Trailmobiles are ideal carriers of casing to wells that are going down. They are useful for long timber poles—any load of unusual length.

The oil business is rapidly becoming one of the most important buyers of trailers, and Trailmobiles offer the most complete and varied line. Trailmobiles are rugged, sturdy, oversized, well designed and most efficient.

Write for literature.

The Trailmobile Co., 2925 Robertson Ave., Oakley, Cincinnati, Ohio

Good roads are preserved by reducing the load carried on each wheel

New 28th Annual Edition of

Hendrick's Commercial Register of the United States for Buyers and Sellers (1919-1920)

A copy should be in every sales and purchasing department. It contains complete lists of all prospective customers as well as lists of producers of any product which may be required.

$12.50—for sale by

National Petroleum News

812 Huron Road Cleveland, Ohio

Cut No. 280 For Gasoline at the Curb

Money-Makers

Wayne Curb Pumps give you better profits because they are so well made that they last longer, serve better, and are *always on the job* at the curb, for you and your trade. *Write for Bulletins 280NP and 11NP.*

WAYNE OIL & PUMP CO.

724 Canal St. Fort Wayne, Ind.

Sales Offices in All Large Cities. *Representatives Everywhere.*

REG. U.S. Wayne TRADE MARK

Honest Measure Pumps

Cut No. 11 For Air and Water at the Curb

Gives Specifications For Tank Compartments

ST. PAUL, MINN., July 31.—Following an investigation of tank compartments used as measures for petroleum products in the state of Minnesota, the state commissioner of weights and measures has announced that he has found in an inspection of tank compartments of seven of the largest companies, none that could be given the state approval seal, and that the following specifications will govern:

1. Tank compartments used as measures must be substantial enough to hold their shape under all ordinary conditions of usage.

2. Provision must be made whereby tank compartments shall completely drain regardless of the level on which the conveyance stands.

3. Measures must be provided at the top of tank compartments so that visual inspection can be made of the inside thereof to a point where the outlet holes are located, either by the state department of weights and measures or by the oil purchaser.

4. A definite point to fill to must be established in such a manner as to take care of the expansion of the commodity due to temperature changes.

The commissioner pointed out that unless the tank compartments are used as measures, it is not mandatory that they be tested and sealed by the state, and if the tank is used only as a carrying container, depending upon the use of sealed five-gallon buckets to measure the quantity delivered, it need not conform to the specifications.

That adequate time may be given to make the necessary changes in truck tanks and wagons to meet the requirements, oil companies are given until February 1, after which time the use of a hose for delivery will be prohibited unless the specifications are complied with.

In more detail, the requirements after February 1, for compartments used as measures, are set forth as follows:

A top opening, centrally located, must be provided for each tank compartment. This opening must be large enough in diameter to allow visual examination of the outlet holes in each compartment, but in no case shall the top opening diameter be less than four inches.

This man-hole or dome may take the form of a piece of pipe thrust downwards into the tank compartments at least one inch, in which case air-vent holes must be provided in said pipe immediately below the top of compartment shell.

If the man-hole or dome takes the form of the curvature of top of compartment, not extending into the tank, the lowest part of the said man-hole or dome shall be at least one inch below the inner side of shell at highest point of curvature.

The filling point will be to the lowest part or edge of said dome or man-hole.

In the bottom of any tank or compartment there shall be an outlet located at each end thereof, and the pipes leading from said outlets must join into one pipe or faucet at the discharge end.

The discharge pipes shall incline at least six inches towards their respective emptying ends or faucets when the vehicle stands on a level surface. See note below.

A tank or compartment must be constructed substantially enough to hold its shape under all ordinary conditions of usage.

"Horse Sense"

"Whoa" and "Giddap" are becoming obsolete in the vocabulary of men in the hauling business.

The Traffic is the lowest priced 4,000-lb. capacity truck in the world. Built of standardized units.

Traffic Truck Specifications:

Red Seal Continental 3¾ x 5 motor; ***Covert transmission;*** multiple disc clutch; ***Bosch magneto; Carter carburetor;*** 4-piece cast shell, cellular type radiator; drop forged front axle with ***Timken roller bearings; Russel rear axle,*** internal gear, roller bearings; semi-elliptic front and rear springs; ***6-inch U-channel frame; Standard Fisk tires, 34 x 3½ front, 34 x 5 rear; 133-inch wheelbase; 122-inch length of frame behind driver's seat;*** oil cup lubricating system; chassis painted, striped and varnished; driver's lazy-back seat and cushion regular equipment. Pneumatic cord tire equipment at extra cost.

chassis $1495 *factory*

Traffic Truck chassis equipped with cab, hoist, steel dump body (painted and varnished), *no extras required,* $1990 complete, at factory.

Buyers of Traffic Trucks can make the same remarkable relative saving in cabs and bodies as they make in the purchase of the truck chassis, by insisting upon Traffic Truck dealers furnishing Traffic cabs and bodies. Specialization and quantity production make the same high quality and low price possible on all-weather cabs, platforms, express, stake, grain, live stock, dump and oil tank bodies.

Buy Traffic equipment and save money!

Write for catalog naming prices and specifications.

Notice to Dealers:

It is Traffic policy to make direct connections in every city, town and village in the United States and Canada.

The demand for Traffics has made it necessary to quadruple the production this year.

Many dealers are getting in line now for future Traffic franchises.

You have no time to lose.

Traffic Truck

4000 LBS. CAPACITY

(chassis) $1495 (factory)

Costs very little for operating and upkeep

LIBERTY BELL OIL COMPANY
REFINED AND LUBRICATING
OILS AND GREASES
600 TO 604 SOUTH VANDEVENTER AVENUE

St. Louis, Mo., April 1, 1920.

Traffic Motor Truck Corporation,
5200 N. Second Street,
St. Louis, Mo.

Gentlemen:

With reference to the Traffic Truck purchased from you, we wish to state that this truck has given us excellent satisfaction and has cost us very little for operating and upkeep.

We highly endorse the Traffic to anyone who has use for a 4,000-lb. capacity truck.

Very truly yours,
LIBERTY BELL OIL COMPANY.
Chas. Osthoff, President.

CO-MR

Write for Catalog Today

Traffic Motor Truck Corporation

St. Louis, U. S. A.

Largest exclusive builders of 4,000-lb. capacity trucks in the world.

NOW READY—BATTLE'S NEW BOOK

"INDUSTRIAL OIL ENGINEERING"

A reference book of data, tables, general oil information, engineering and industrial oil requirements for the use of—

Oil Engineers	**Lubricating Engineers**	**Oil Salesmen**
Mechanical Engineers	**Oil Equipment Manufacturers**	**Purchasing Agents**
Machinery Designers	**Power Plant Superintendents**	**Mill Superintendents**

and others interested in the selection, purchase and efficient utilization of oil products and equipment, the conservation of power and the elimination of oil wastage.

The book is published in two volumes, each volume complete in itself. **Volume I, Industrial Oils and Lubrication; Volume II, Liquid Fuels (In Preparation).** Volume I is issued first.

This comprehensive work has been prepared and written by John Rome Battle and includes all the data in his previous editions of "Lubricating Engineers Handbook." But this new work has been greatly enlarged and new subjects added.

Mr. Battle has had many years of experience in the oil industry first as a salesman, specializing in lubricating oils, as a sales manager and as an engineer investigating and solving oil problems relating to all sorts of machinery used in every kind of industry. He has degrees of B.Sc. in M.E. and M.E., he is an associate member American Society of Mechanical Engineers, member Engineers Club of Philadelphia, consulting industrial oil and mechanical engineer and chief engineer J. R. Battle Co., Philadelphia, and Associate Editor for several years and author of many articles on lubrication and industrial oil engineering of **National Petroleum News.**

SPECIAL FEATURES APPEALING TO THE OIL INDUSTRY

Combined Price and Brand Book

Special pages are inserted in Vol. I between the sections on Industrial Practice. On these pages the oil man can insert prices, tests and his own and competitive brands for the uses just discussed, making a quick reference for his products and their industrial uses. This makes the book a time saver in educating a new salesman to your products and it also can be used as a general office guide.

Technical Terms Carefully Explained

While being in every respect a thoro technical work on the subjects covered, explanations of material and terms are so used and given that it is easy for the non-technical reader to follow the text. Trade terms in each industry are given and explained so that the salesman can talk with assurance to the practical man.

Illustrations, Charts and Tables

Wherever possible illustrations have been used to explain the text and so as to familiarize the reader with the different kinds of equipment used for oil and on which oil is applied. Methods of testing are freely illustrated.

Handy Size and Style

The book is bound for hard usage. Its covers are flexible leather, the pages are in clear type, 7½ by 5½ inches, the paper is thin but tough. Thumb index is provided to the main sections and the general index is designed for accurate and quick use. The book will carry easily in a salesman's case.

This book should not only be a part of every oil company's oil library, but it should be on the desk of every oil executive and in the hands of every oil salesman. It's designed as a practical tool for every day work of the oil man.

Price of Volume One, now being prepared for mailing, $10.00, postage extra.

NATIONAL PETROLEUM NEWS

510 CAXTON BLDG. CLEVELAND, OHIO

What the New Book Will Tell You

DESCRIPTION OF VOLUME I—INDUSTRIAL OILS AND LUBRICATIONS

THE SUBJECT: This volume covers the field of lubricating engineering, fundamental mechanical and electrical engineering, industrial oils and processes, fatty oils (their characteristics and uses), lubricating and industrial oil equipment, marketing data for oil specifications, etc.

Volume I is divided into sections according to the broad classification of the subjects covered. A brief outline of the contents of the sections is as follows:

Sec. 1. **Mathematics** and useful data, including fractions and decimals, percentage, brokerage, interest, ratio, logarithms and three-place logarithm tables, discounts, payments, mensuration, cylindrical vessels and tables, rectangular vessels and tables, weights, measures, conversion table for weights and measures, theremometer comparison tables, etc.

Sec. 2. **Marketing,** including trade journals, freight rate tables, shipping weight data, business law, contracts, buying and selling terms, oil packages, tank cars, quotation records, etc.

Sec. 3. **Mechanical Engineering,** including work and power, costs, shafting, water, steam steam tables for saturated and superheated steam, pipes, steam engines various types, steam turbines, steam engine indicators and their use, friction tests with the indicator, electrical data and terms, etc.

Sec. 4. **Petroleum and Its Products.** Origin of petroleum, historical notes, petroleum crudes, American and foreign crudes, production methods and notes, etc.

Sec. 4a. **Petroleum Chemistry,** including chemical structures of various crudes, specific heats of petroleums, hygienic factors, etc.

Sec. 4b. **Shale Oils,** including general information on treatment, properties, characteristics, retorting and refining, products, etc.

Sec. 4c. **Refining of Petroleum and Manufacture of Products,** including general description and charts of refining operations, stills, cracking processes, wax presses, and description of various oil products and their properties, etc.

Sec. 4d **Data on Petroleum Products,** such as wax, chemistry of wax, petroleum, wax tailings, oil asphalts, etc.

Sec. 4e. **Gasoline and Engine Fuels.** Types of gasolines, composition, calorific values, volatility, gasoline substitutes, alcohol, benzol, kerosene, distillate, etc. Government specifications.

Sec. 4f. **Petroleum Lubricants.** Typical tests of lubricating oils from various crudes, various types of cylinder stocks, black oils, paraffin oils, neutrals, paraffin base and asphalt base oils, special products such as belt dressings, medicinal oils, dust-laying oils, etc.

Sec. 4g. **Lubricating Greases and Other Lubricants.** General types and manufacture, chemical structure, descriptions of fibre, cup, tallow, semi-fluid, cold set, boiled, double decomposition and graphite greases, manufacture testing, melting points, uses, etc. Graphite.

Sec. 5. **Fats and Oils other than Petroleum Products,** including the chemistry of fixed or fatty oils, action of fatty oils upon metals, common uses for fatty oils, saponification, saponification value, iodine value, blown oils, sulphonated oils, spontaneous combustion, drying tests, trading units, properties and characteristics of fish, seal, whale oils, etc.

General description of refining of vegetable and seed oils, including the properties of castor, china wood, cocoanut, corn, cottonseed, linseed, olive, palm, palm nut, peanut, rapeseed, resin, soya bean, and other vegetable and seed oils.

Animal oils and fats, including general processes and properties of bone tallow, degras, horse fat, lard, neatsfoot, red oil, stearin, tallow and other oils and fats.

General tables of tests, properties, and data covering numerous fatty oils.

Sec. 6. Testing and Properties of Oils, including description of methods and apparatus for testing oils, for gravity (including gravity conversion tables both moduli) and tables of gravities and weights per gallon and gallons per pound, cold test, viscosity (including tables for conversion of readings of various instruments, and theory of viscosity as regards lubrication), tests for fatty oils and compounds, acidity, free fatty acids, corrosion, volatility, tarry matter, evaporation, ash color values, gumming, oxidization, Conradson carbon, carbonization. Waters, iodine value, demulsibility, etc.

Rate of expansion and coefficient of expansion tables for oil. Grease tests, consistometer, etc.

Friction testing machines.

Sec. 7. Lubrication and Friction, definition of various types of friction, oiliness, etc.

Sec. 7a. Bearings and their Lubrication. Sliding contact type, including definition and description of various types of bearings, bearing metals, theory of bearing lubrication with oil, bearing clearance, bearing characteristics with reference to lubrication, semi-dry friction, oil grooves, hot boxes, etc.

Theory of bearing lubrication with greases.

Sec. 7b. Ball Bearings, various types and their lubrication.

Sec. 7c. Roller Bearings, various types and their lubrication.

Sec. 7d. Line Shaft Bearings, types and lubrication.

Sec. 7e. Bearing Lubrication. Equipment for oil lubrication, including oil cups, etc., systems, methods such as hand feed, ring feed, gravity feed, forced feed, splash feed, wick feed, etc.

Equipment and methods of grease lubrication, including hand compression cups, marine, gravity, compression, and automatic cups.

Sec. 8. Filters, Filtration, and Reclamation of Lubricating Oils. Types of filters and filtering mediums, reclamation processes, motor oil purifiers, centrifugal clarifiers and purifiers, etc.

Sec. 8a. Oil Coolers, various types, principles, care, design, and efficiency of.

Sec. 9. Oil Storage and Handling. Tank dimensions and specifications, gauges of sheets and plates,

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effect of tank color, pneumercators, extinguishing oil fires, pumps, foam systems and mixtures, etc.

Sec. 9a. Lubricating and Industrial Oil Storage. General equipment for industrial plant oil storage, pump tanks, oil house equipment and design, oil house records, special equipment, etc. Concrete storage tanks, etc.

Sec. 10. Industrial Practice and Utilization of Lubricating Oils and Industrial Oils, including:

NOTE—*Section 10 is subdivided into a number of subsections, each dealing with the utilization of oil products for a specific industrial or manufacturing purpose. A section is devoted to each type of industrial process described.*

These subsections include such subjects as the lubrication of the equipment involved; the requirements of the oil products where they are used as a component material entering into the make-up of the finished product; actual test data and operating results of oil product uses in these various industrial classifications; illustrations of the equipment involved, where such matter is necessary to explain the text and to familiarize the reader with its construction.

Numerous formulae and specifications are given for oil products to meet the many requirements as described.

Sec. 10a. Artillery and Ordnance.

Sec. 10b. Air Compressors and Lubrication.

Sec. 10c. Aviation Engines, types, tests, lubrication, fuels, etc.

Sec. 10d. Automobiles, types, lubricating systems, motor oils, chassis lubrication, clutches, transmissions, etc.

Sec. 10e. Baking Machinery.

Sec. 10f. Brick Plants, and Brick Oils.

Sec. 10g. Candles and Candle Making.

Sec. 10h. Chains and Cables.

Sec. 10i. Cement Mills.

Sec. 10j. Core Binders, and Foundry Practice.

Sec. 10k. Cutting and Drilling Metal, Theory, Oils and Oil Systems, and Oil Recovery.

Sec. 10L. Diesel Engines, types, fuel, lubricants, etc.

Sec. 10m. Drawing Operations and Lubricants for Metal.

Sec. 10n. Dry-cleaning Systems.

Sec. 10p. Electric Cars, lubricating requirements and data.

Sec. 10q. Electric Cranes and Lubrication.

Sec. 10r. Electric Motors and Dynamos.

Sec. 10s. Elevators, types and lubrication.

Sec. 10t. Extrusion of Metals, process and oils for.

Sec. 10u. Flour Mills.

Sec. 10v. Forging and Die Swabbing.

Sec. 10w. Heat Treatment of Steel, definition of classes of steel, decalescence and recalescence, Brinnell test, scleroscope principle, quenching definition and mediums used, quenching speeds various mediums, data on quenching oils, quenching systems and coolers for quenching medium, annealing, tempering, tempering oils, etc.

Sec. 10x. Hydraulic Equipment, Lubrication Data.

Sec. 10y. Internal Combustion Engines, lubrication data, types of engines, lubricators, engine tests, horsepower formulae, etc.

Sec. 10z. Insect Sprays.

Sec. 10aa. Marine Engines and Marine Oils, marine oiling systems, storm oils, etc., mileage contracts for marine lubrication.

Sec. 10bb. Mining Operations. Mine car lubrication, types of mine car wheels, colliery .lubrication, mine pumps, lamp oils, etc.

Sec. 10cc. Naval Oils, U. S. Naval Oil test methods and requirements.

Sec. 10dd. Oil Switches and Electric Circuit breakers, oils for.

Sec. 10ee. Pneumatic Tools. Types, operation and lubrication of.

Sec. 10ff. Printing Plants. Presses, printing plant oils and lubrication, ink oils.

Sec. 10gg. Railways. Car journal lubrication and care, locomotive types, equipment and lubrication of, railroad oils, air-brake operation and lubrication, flange oilers, car-lighting dynamo lubrication, etc.

Sec. 10hh. Refrigeration. Types, ice-making plants and systems lubrication and care of, ammonia compressors, etc.

Sec. 10jj. Rust Prevention Cause and Rust Preventatives.

Sec. 10kk. Shoe Factories. Operations, machines and lubrication.

Sec. 10LL. Shipyards. Equipment and lubrication. Launching ways and launching lubricants.

Sec. 10mm. Soap Making. Types of soap, mineral soap stocks, etc.

Sec. 10nn. Steam Cylinder Lubrication. Factors affecting, types of lubricators, cylinder oils and consumption of, etc.

Sec. 10pp. Rolling Mills and their Lubrication. Oiling systems, etc.

Sec. 10qq. Sugar House Machinery, operations and lubrication.

Sec. 10rr. Textile Operations. Lubricating factors affecting. Cotton gins, manufacturing operations of cotton, cotton machinery and its lubrication, opening, mixing, carding, combing, drawing, slubbing, spindles, spinning, and winders. Wool data and properties, treatment, operations, etc. Wool substitutes, shoddy, hair fibres, etc. Wool machinery willows, pickers, garnetts, etc. Woolen and worsted systems. Wool oils and oiling methods, wool spinning. Textile soaps and operations. Scouring. Finishing. Weaving. Looms. Knitting, machines and operations, types and lubrication. Carpet mills, tire fabric mills, hose plants, tapestry and plush mills, print works, quilt mills, etc. Silk fibre, degumming, silk oils, softeners, silk spinning and artificial silk. Textile oils, turkey red oil, soluble oils, silk soaps. Textile notes, stains, effect of oil on textiles, etc.

Sec. 10ss. Tinplate Mills, operations and oils.

Sec. 10tt. Tractors and Lubrication.

Sec. 10uu. Transformers and Transformer Oils. Dielectric strength. Oil testing sets, transformer fires, etc.

Sec. 10vv. Steam Turbines, lubrication of various types. Turbine oils.

Sec. 10ww. Washing Oils. Toluol recovery.

Sec. 10xx. Waste Manufacture and Stock Oils.

Sec. 10yy. Water Wheels and Generators.

Sec. 11. Industrial Oil Specifications, preparation, typical tests.

Sec. 11a. Lubrication Costs, depreciation of lubricants, etc.

Sec. 11b. Lubricating Engineering Reports and Surveys. Miscellaneous government specifications and test methods.

Sec. 11c. Lubricating Specifications and Test Methods, Committee on Standardization of Petroleum Specifications.

Sec. 11d. Motor Gasoline Specifications, Committee on Standardization of Petroleum Specifications.

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NATIONAL PETROLEUM NEWS
510 CAXTON BLDG. CLEVELAND, OHIO

Deepwater Plant On Houston Ship Channel, Model Fireproof Refinery

Staff Special
HOUSTON, Aug. 2

FIREPROOF construction, including concrete smokestacks, concrete bases for the standards that hold up the overhead lines to the run-down tanks, etc., has been utilized in the building of the new plant of the Deepwater Oil Refineries on the Houston ship channel. The plant, with present capacity of 1,200 barrels daily, is expected to be eventually extended to 3,000 barrels daily charging capacity. It has just been completed down the ship channel from Houston and plans already are in a formative stage for an auxiliary barreling plant, which it is hoped by the management to have in operation in about six months, this step being taken preliminary to proposed export business.

When ground was broken for the Houston plant the first of last September, it was the idea of President R. A. Fouts and Superintendent C. W. Shearer among others of the official family to construct an ideal lubricating plant, which would start operations at the present capacity and which would be extended as fast as conditions warranted. So well did their plan succeed that the concrete, steel and brick work were put in place so as to constitute a fireproof construction on which the lowest insurance rate for refineries prevails.

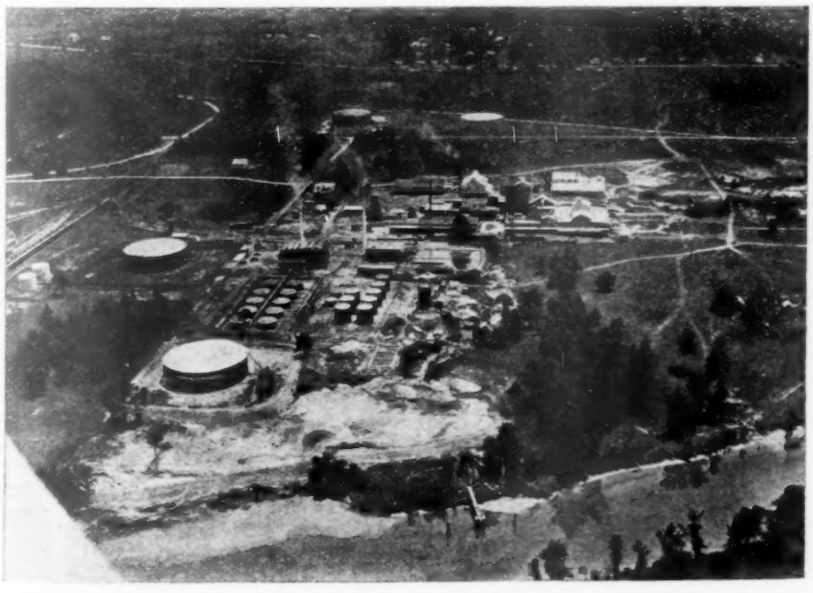
Work was pushed rapidly as soon as actual construction work was begun, and first runs on Goose Creek crude oil, barged up the ship channel to the refinery site, where unloading facilities had been installed, were made a few weeks ago. The plant now is operating regularly in the hands of Superintendent Shearer and J. P. Gillen, formerly refinery superintendent at the Sinclair Refining Company plant at Houston, who has recently become connected with the Deepwater.

Altho concrete smokestacks, etc., have been frequently utilized in southwestern plant construction, including the Sinclair and Galena Signal Oil Company plants near Houston, they are not so common in the north and east.

Wrought iron standards with concrete bases support overhead lines to run-down tanks

An idea of the thoro construction from all new material of the Deepwater plant is indicated in a picture of the grounds, taken from an airplane, appearing herewith. A smaller picture shows the utilization of a concrete base and 3-inch wrought iron standards holding up the lines to the run-down tanks.

R. A. Fouts, president and general manager, is also connected with the man-



Airplane view of the new plant of Deepwater Oil Refineries on the Houston ship channel. The first runs were made on crude from the Goose Creek field, barged up the ship channel, which is seen in the foreground

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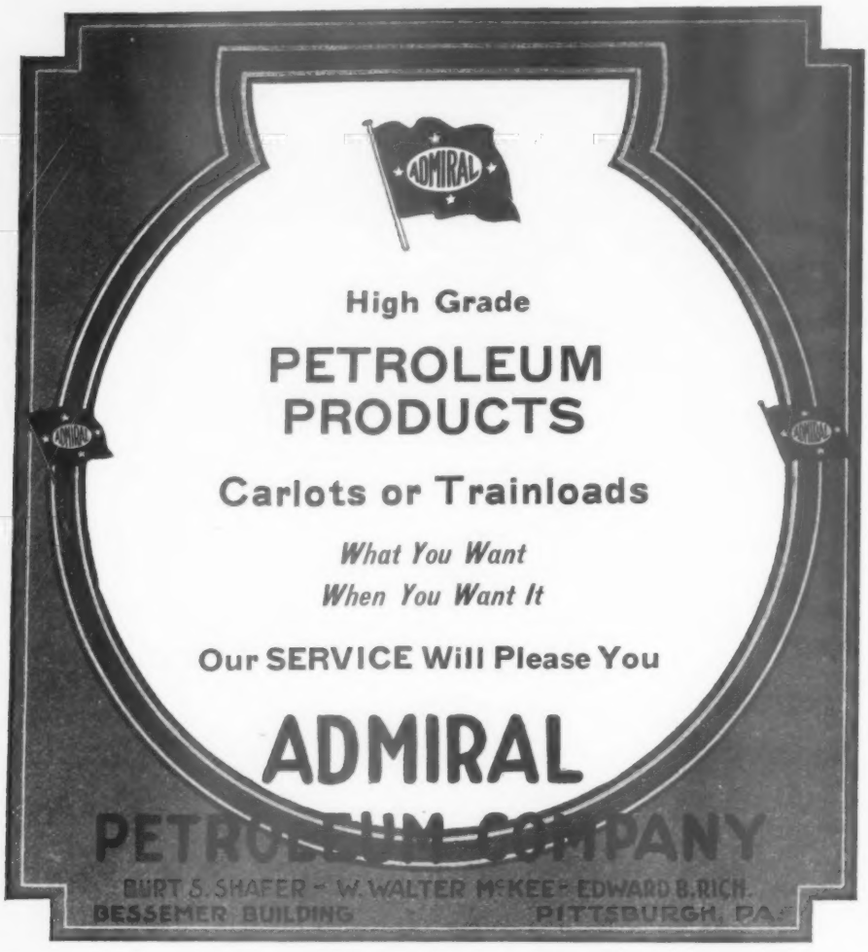

Commends Charcoal Process

BRADFORD OIL & GASOLINE CO., INC.
BRADFORD, PA.

July 14, 1920

Mr. G. A. Burrell,
Gasoline Recovery Co.,
2907 Equitable Bldg.,
New York City.

Dear Sir:-

Last Thursday I had the pleasure of having the operation of your Charcoal Absorption Process demonstrated in its various steps by Mr. Voress. From what I saw during that time I am sure it is the process we have all been looking for. Its simplicity, compactness and efficiency are almost beyond belief, as I went out to Lewis Run with the expectation of seeing the usual towers used in the absorption system with its attendant machinery.

Very truly yours,

(Signed) H. K. Daugherty

agement of the Red River Refining Company, which has a small plant in North Louisiana, near Shreveport. Other members of the official family of the Deepwater are F. M. Law, vice president; E. L. Neville, secretary-treasurer; E. F. Harrell, assistant secretary-treasurer; C. W. Shearer, superintendent; C. H. Traebing, assistant superintendent; trustees are R. A. Fouts, E. A. Peden, F. M. Law, J. T. Scott and E. L. Neville. Louis F. Rothermel, recently connected with the Union Petroleum Company at Philadelphia, recently took up his new duties as sales manager.

Encourage Wildcatter, O'Donnell's Message

NEW YORK, August 2.—A resolution recommending a free and open opportunity for the maximum development of fuel, including coal and oil, was passed by the International Chamber of Commerce, of which the American Petroleum Institute is an affiliated member, at the organization meeting held in Paris, June 21-29.

While the resolution was concurred in by representatives of the foreign trade bodies participating in the meeting, a statement of the views of the American delegates representing the oil industry was set forth in the form of a footnote to the resolution, which is as follows:

"The American delegates representing petroleum advise:

"That the consumption of petroleum thruout the world is exceeding the production;

"That the world is confronted with a serious shortage in the near future unless energetic efforts are made to increase the production;

"That in their judgment sufficient undiscovered petroleum deposits exist in many parts of the world to supply present and future requirements;

"That curtailment of the exploration and production is being caused by restrictive laws and regulations of many governments;

"That a free opportunity to all nations to explore and develop the petroleum resources of the world wherever found should be freely extended;

"They therefore recommend that laws, regulations, or administrative acts which tend to retard the development of the petroleum resources of the world should be repealed or revoked, and that equal privileges in all parts of the world be granted to nationals of all countries in the production of this great and useful natural resource, so vitally essential to the world's progress."

"Encourage the wildcatter," Thomas A. O'Donnell, president of the institute advised, in an address which preceded the passage of the resolution, and which was offered as a statement of the views of the American delegates.

"The war has brought about a very greatly increased appreciation of the value of petroleum as a fuel, principally in connection with the development of the internal combustion engine. The war has also brought to our attention the necessity of increased production, if the increasing demands of the world are to be fully met. At the present time, petroleum is attracting the attention of the world," said Mr. O'Donnell.

"There seems to be a general impression that the petroleum resources of the

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United States have been practically exhausted, and that the apparent shortage which has grown rather acute in the last few months, has been caused by the exhaustion of the sources of supply. This is not correct. It has been brought about by increased demands rather than decreased production. We are producing in the United States today more crude oil than we ever have in the history of our country. But we are drawing heavily every month from our accumulated stocks, which are already low. Each month shows an increased demand over the previous month, and this cannot continue for any great length of time without serious shortage occurring, making it necessary for either curtailed consumption or increased production.

Governments Curtail Production

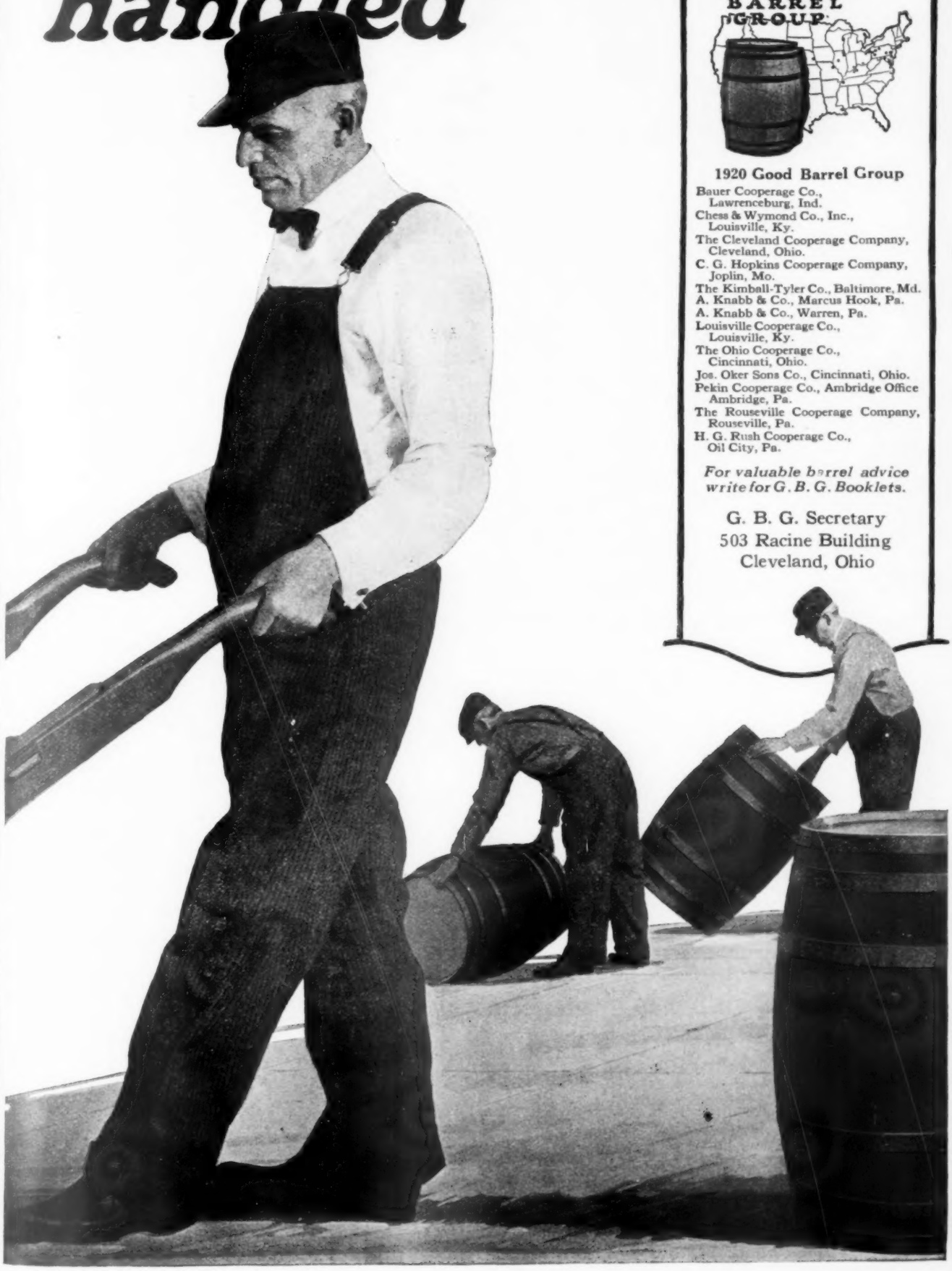
"Notwithstanding the necessity for increased production, nearly all governments seem to be adopting a destructive policy of restrictive legislation, which cannot but curtail the necessary prospecting and production of petroleum. Personally I am not pessimistic as to the future supply, as I believe there are many parts of the world in which petroleum exists in sufficient quantities to supply the requirements of humanity, no matter how extensive they might be, but nature has not left on the surface of the earth sufficient evidence to indicate its location to make it readily and quickly available. I believe if all governments would establish the policy of open and free opportunity for everybody from everywhere to prospect and develop the petroleum resources of the world, the results would be gratifying and sufficient to meet the requirements. Up to the present time, practically 70 per cent of the petroleum produced in the world has come from within the boundaries of the United States. This has been largely due to the free opportunity for all people to participate in its development. In the United States we call a prospecting well a 'wildcat,' and the driller of such a well, a 'wildcatter,' and of all the wildcat wells drilled during the sixty years of activity of the petroleum industry in the United States, 98 per cent or more have been failures. The 2 per cent or less of successes, have been the foundation on which the petroleum industry of America has been built.

"During these sixty years of development, each period of increased demands and shortage of supply, followed by increased prices, has always brought about renewed activity of the wildcatter, and in every instance up to the present time, has been followed not only by an increased production, but by an over production. At the present time, however, the increased demands have become so enormous that it is generally believed by those in the petroleum industry in America that increased activity of the wildcatter in that country, will not produce sufficient oil to take care of the world's requirements. It will therefore be necessary for the same kind of activity to be brought about in other parts of the world, and this can only be accomplished by the removal of government restrictions, and the giving of free opportunity to the prospector.

"In the United States sub-soil rights go with the ownership of the land, and all that is necessary for anybody from anywhere to start the drilling of a wildcat well, is to make a deal, either by lease, contract, or purchase, of the land involved, and start his well without any government permit or regulation. The same oppor-

(Continued on Page 66)

handled



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(Continued from Page 62)

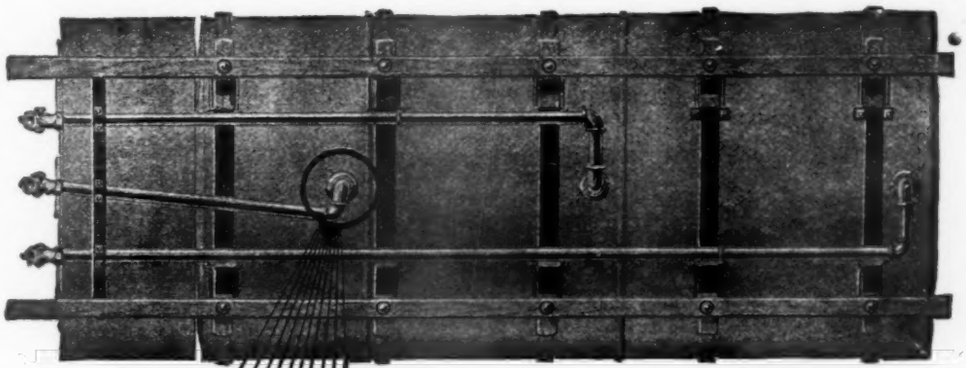
tunity is given to all—whether Americans or not. Anyone has a free opportunity to reap the reward of great wealth if he strikes oil, with an equal opportunity of going 'broke.'

"For a number of years in the Republic of Mexico, sub-soil rights followed the ownership of the land, and Americans and all other nationals, were permitted a free opportunity for the development of the petroleum resources of that country, and from the time of the first discovery of petroleum in Mexico in commercial quantities, the petroleum resources of that country were rapidly developed by British, French, Dutch and Americans, as well as Mexicans. New discoveries have now been practically brought to an end by government interference and so-called constitutional and nationalistic regulations. If a free and open opportunity had been continued in Mexico as formerly, the world would not now be faced with an approaching shortage. It may be added that during the period of Mexico's petroleum development, that otherwise unfortunate country experienced its greatest era of national prosperity. When the Mexicans are able to establish a stable government, nothing could be of greater importance to the future prosperity and happiness of her people than a return to the former policy of unrestricted opportunity for the development of Mexico's petroleum resources.

Standard Doesn't Lead Producers

"There is an impression which is quite general regarding the American petroleum industry which I would like to correct. Most people not familiar with the subject abroad and some of our people at home, consider that when you speak of the petroleum industry in the U. S., you are referring to the Standard Oil Company, which would give the impression that this organization produces practically all of the oil in America. This is misleading. The Standard Oil Company is occupied largely in transporting, refining and marketing. Altho I have no exact figures available, I would venture to say that they were not the original producers of 5 per cent of the petroleum produced in America, and thru years of accumulation by purchase and otherwise, they have not acquired more than 17 or 18 per cent of the American petroleum production. There are over 16,000 companies interested in the petroleum industry in the United States, having hundreds of thousands of stockholders in all parts of the world. One of these companies has over 22,000 stockholders. The 25 or more Standard Oil Companies which go to make up the Standard Oil group, have each many thousands of stockholders, and are not simply a one man interest, as has often been supposed. The individual American who has not had some kind of a stock certificate with the word 'oil' printed on it, is a rarity. A great number of American citizens are engaged in the petroleum industry, and in one way or another have helped in the exploration work necessary. I think our English friends present will admit that a great many of their fellow countrymen have also had an opportunity of helping in the development of the petroleum resources of the United States. An English member of the Committee on Raw Materials, informed me that he had taken part in the drilling of a number of wells in Pennsylvania, and they had not been successful. Such work,

VITAL POINTS!



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however, had answered a useful purpose, as it had taught a lot of us where there 'ain't' any oil.

"Nobody has a higher appreciation than I of the Englishman abroad and at home. He is a good sportsman, always willing to take a chance in exploring for the world's treasure, a factor everywhere in development. I am rather surprised that some of my good English friends do not fully agree with me in advocating that a free opportunity should be given to all people to explore for this useful product, and that all government restrictions be removed, and that governments, and particularly democratic governments, should not join in business enterprises, creating privileges by combination or otherwise with their own citizens, or citizens or subjects of other countries. Such participation is not in the interests of the future peace of the world, but must add the ill-will and friction of commercial competition to the always delicate problems of international diplomacy in dealing with natural problems of government. This seems to me to be a complete reversal of the policy of Great Britain for upward of a century, the complete reversal of a policy which has made Great Britain the world-wide empire that she is today.

"The great war has caused a terrific upheaval in the world at large, and in order to put forward the maximum effort it was necessary to centralize under government control many of the resources of the countries involved, to the end that their energies might be centered in meeting the demands of military operations, regardless of cost or waste, or the violations of economic principles. Success in meeting the crisis was largely due to the great patriotism of their citizens and their spirit of sacrifice. In order to now solve the problems of reconstruction and peace which confront us, it is necessary, however, that we again regard the essential economic principles of development and return the world's industries to private enterprise. I believe that the maximum effort should be made by all governments to retire from business as rapidly as possible, and remove from their statute books restrictions of all kinds, and allow all people to again participate as rapidly as possible in the necessary production. It is almost unbelievable that so many restrictions exist on the statute books of so many governments, and that the various rumors of governments participating in business enterprises dealing with the production of petroleum are seriously considered. Above all, does it seem to me not possible that the English people who have been such an important factor in production of all kinds thruout the world, should seriously be considering a permanent policy restricting opportunity for development to its own nationals, or to special organizations within its empire. It may be thought by some that such action will permit development. I believe that the contrary will be the result.

Increase In Activity

"May I again say that I believe petroleum exists in many as yet undeveloped parts of the world, that its extensive development in the U. S. has been largely due to the spirit of adventure, and the extensive prospecting that has occurred in that country. There has been no time in the entire sixty years of development in America when there have not been more wild-cat wells drilling than in all the rest of the world put together, and today because of this great shortage and increased

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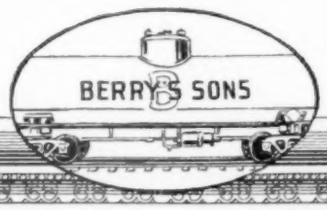

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prices, there is greater activity in this line than ever before. With all this activity, I am sure that the requirements will not be met, and a policy should be adopted by the world at large to encourage the wild-catter, and in order to get him busy, government restrictions must be removed. The chances involved are of such a nature that there must be visions of great wealth thru success. Another important factor is that there must be a reassuring and stabilizing policy in reference to property rights everywhere. You can only induce the wild-catter to get busy if he knows that whatever he finds is his, and that his rights will be protected by society.

"May I refer to a well or two that have recently been drilled in Great Britain. Sufficient oil has been found to indicate that petroleum exists in that country, the quality of which is highly valuable. The very fact that a small quantity has been found would indicate to me the same possibilities as a hunter looking for game would feel when he found fresh tracks, as he would know all he had to do was to continue the hunt to find his quarry, but let me predict that if the pursuit is left entirely to government red tape, restrictions and favoritism, the trail is likely to be obliterated, and altogether forgotten before the discovery is made.

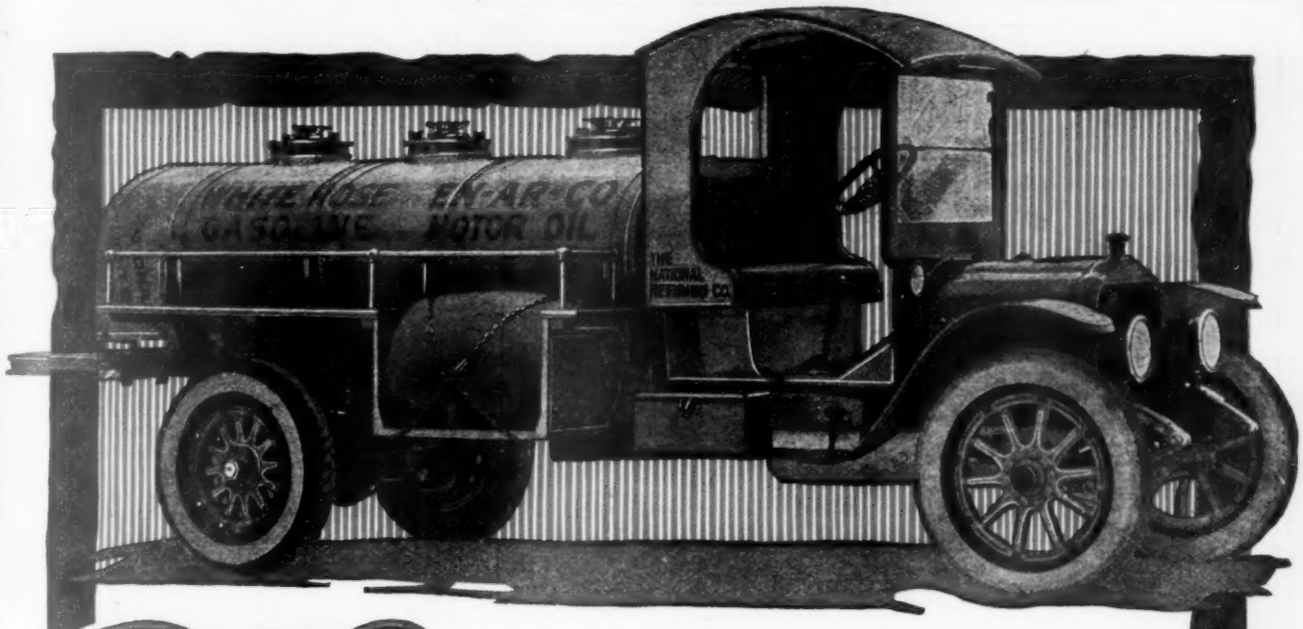
"If you want to develop your petroleum resources, turn the wild-catter loose in England. Some of the best wild-catters we ever had came from England. Turn him loose with his visions of wealth and the probability of failure, but in the aggregate the result of his work will be of immeasurable value. Two or three hundred strings of tools scattered thru the country would quickly determine whether oil exists in commercial quantities. I believe it does, and even if found, by an American, it would be of great importance to the people of England, as it would enrich the landowners and the country and whatever property rights were established would be there, and if at any time petroleum was required for the national defense, it would be at the disposal of the English people. The same thing applies to France or any other country."

Ask Data On Need For Casing Shipment

NEW YORK, July 29.—The American Petroleum Institute is working to effect relief from the stagnation in shipments of oil field tubular goods, especially casing, which has resulted from the order of the Interstate Commerce Commission restricting open top cars to the transportation of coal.

Shipment of pipe, which was tied up for months, due first to the inability of the steel mills to keep up with their orders and then to the railroad strike, is now practically at an absolute standstill. General Secretary R. L. Welch of the institute has sent out the following letter to oil producers:

"As you probably know the Interstate Commerce Commission has ordered that all open top cars with sides in excess of thirty-five inches shall be used exclusively for shipment of coal, thereby restricting the shipment of casing and other oil well material. The effect of this order will soon be reflected in practical cessation of receipts of oil well and pipe line material in your territory. I am satisfied that the steel people will not be able to have



Why did the National order 100 Ohio Truck Tanks?

Because the National Refining Company measure truck tank economy in the average cost per year, instead of by low initial expense!

DURING the past five years we have built truck tanks of varying types and sizes for this progressive organization that gave excellent service. Recently we have completed an order for 100 tank bodies to be mounted on new 2 and 2½ ton Chassis.

We understand that the facts behind this last order are these: The Company found that much of their old equipment of different makes was in the condition where it was costing too much for repairs and maintenance. They therefore, on the grounds of economy, boldly junked everything they had that wasn't up to par and ordered a completely new outfit on which they know that maintenance and repair expense will be right.

It is noteworthy that since we began building tanks for the National they have adopted more and more of the standard features of Davis Ohio Tanks. This last order has standard Davis construction throughout with the addition of one special feature consisting of a barrel rack, incorporated in the design to meet their special requirements.

They appreciate the value of standardized and interchangeable parts, the good appearance and the long service with minimum trouble which Davis Ohio construction affords.

How do you measure truck tank economy?

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In addition to operating large storage facilities at both points, we operate our own gathering lines direct to producer and are in position to give orders prompt handling.

We offer Homer Crude Oil for spot shipment in buyers or sellers cars.

We also handle fuel oil, gasoline and refined oils in tank car lots and are prepared to name attractive prices on these products.

Steiner Oil Corporation

General Offices:

Praetorian Building Dallas, Texas

this order modified so as to permit the shipment of steel products in general.

"There is a possibility, however, that the commission might permit the placement of cars at steel mills for specific shipments where production or transportation of oil is now being interfered with or will be interfered with by the inability of the steel mills to ship material which would normally be shipped within the next thirty days but for this order of the commission.

"If your operations will be interfered with by failure to receive material which ought to be shipped within the next thirty days, please wire me as promptly as possible at 15 West 44th Street, New York City, stating the character and quantity of oil well material needed and ordered, the name of the company from which ordered, shipping point and point of destination. Please be as specific as possible in giving facts as to the interference with your actual operations and effect upon your production which the Interstate Commerce Commission order will have.

"Can give no definite assurance that we can be helpful in this critical transportation situation, but we are willing and glad to do our best, and your cooperation in furnishing promptly, by wire, the above data will be of valuable assistance."

Beaver Refining Company, of Pittsburgh, announces the establishment of five branches as follows: Dallas, Texas, 511 Insurance Building; Shreveport, La., 203 Merchants Building; Tulsa, Okla., 1017 New Daniel Building; Chicago, 732 Conway Building and Louisville, Ky.

The company has nearly 1,000 tank cars and has large fuel storage at Edgecliff, Pa., and refined oil storage at Washington, Pa., where the Beaver refinery is located. Additional storage will be built, according to present plans, at other important consuming districts.

George D. Locke, of Tulsa, vice president of the Bigheart Producing and Refining Company, was elected chairman of the board of grand trustees of the B. P. O. Elks at the fifty-sixth grand lodge annual session recently held in Chicago. The oil industry has further representation on the board in the person of P. T. Powers, secretary and treasurer of the Toxaway Oil Company, Jersey City.

OKLAHOMA CITY, August 2.—A public hearing in the Red River oil land controversy will be held here Wednesday, August 4, before the United States commissioner appointed to gather evidence in the case, it was announced today.

Hearings will also be held at Medicine Park and St. Louis. All proof and evidence in the case must be prepared and submitted to the United States Supreme Court by August 15, according to state officials.

LEXINGTON, KY., August 2.—The first shipment of oil from Simpson county has been made with six tank cars consigned to a refinery at Latonia, Ky. It marked an epoch in the oil business in that county. A year ago the work of development was begun in that county and already a pipe line has been completed, which not only affords an opportunity for market from eastern and southern Simpson, but western Allen county as well.

PRODUCTION SECTION

Tulsa Bureau
408 Cosden Building
J. B. Gambrell, Jr., Manager

Houston Bureau
303 Lumberman's Bank Building
Paul Wagner, Manager

New Wells Of Routine Character

WHILE there was no more than a seasonable lull in the activity of the fields of the United States during the trade week, except in certain parts of north Texas where operations are falling off, nothing noteworthy developed which would point to the opening up of a new pool. Oklahoma and Kansas both suffered a slump in the amount of daily production and completions generally were listed to previously defined areas.

Production from the Mississippi lime in Oklahoma is showing a woful lack of consistency and operators are realizing that slight dependence can be put upon this source of production. The western part of the Osage reservation is conceded by Oklahoma operators to be the greatest reservoir of oil in the Mid-Continent field, but it is an open question of the inducement this territory offers to commercial production. Wells producing from the first or second break in the Mississippi lime are showing a most erratic performance and it is doubtful whether these wells will prove a commercial success on the whole.

The Urshell test in Sec. 16-21-5, Marion county, Kansas, is swabbing 75 barrels with a hole full of oil. It is two and a half miles southeast of Florence and about six and a half miles northeast of the Peabody pool proper. Nearest production is two miles and it is rated as a 150-barrel well as it stands.

Texas Operations Generally Dull

Viewed as a whole, Texas operations have shown increasing dullness over the week. The only completions of significance in the greater Wichita Falls district, or sand country of north Texas, were in the southeast Burkburnett, or so-called Texhoma pool, where the pay level is reached at 1,200 feet, and in the Kemp-Munger-Allen pool west of Wichita Falls, where the producing horizon is a thin sand.

For the first time in the history of the general Ranger, or black lime territory, operators are now in position to carry on developments along rational lines. Heretofore acreage bonuses have added to the otherwise high cost of developing this deep pay country, but the difficulty of recovering the acreage and development costs from the wells which deplete rapidly has had the inevitable effect of cutting the acreage bonuses.

Coastal "Gusher" is Holding Up

The Texas Company's No. 1 Abrams, three-quarters of a mile northwest of the previous definition of the West Columbia pool in Brazoria county, Texas, a recent completion, is holding up closely to its initial mark of 25,000 barrels daily and has shown no salt water, in contrast to the majority of wells in the West Columbia pool.

Louisiana "Wildcats" Disappoint

Test wells outside the recognized pools of Louisiana which were completed during the week, have been disappointments. Three more failures were recorded in Bienville parish, which adjoins Claiborne parish, the location of the Homer pool. A Bossier parish test was a failure. Completions in north Louisiana outnumbered those in any week recently, while new production fell off.

Kentucky's production, based on pipe line runs, during June totaled 733,570 barrels, a gain of more than 900 barrels over the total for May. Operators report a number of good completions in Kentucky, with one in Simpson county estimated at 800 to 1,000 barrels initial.

Late Field News

RAWLINS, WYO., Aug. 2.—Producers and Refiners Corporation's test in township 26, range 86, Carbon county, 40 miles north of Rawlins, Lost Soldier field, stands full of oil at 3,200 feet.

West and Hazlett and Prairie Oil & Gas Company's No. 28, Lost Soldier field, is making 600 barrels a day from three sands, at 400, 900 and 1,100 feet, the two deep sands not producing before.

General Petroleum Corporation, drilling on Ferris Dome, 18 miles east of Lost Soldier, is down 4,700 feet with an oil showing at 4,400 feet. Its No. 1 well is good for 300 barrels at 3,400 feet.

Kasoming Oil Company's well on Separation Flat, thirty miles north of Rawlins, Mahone dome structure, is being worked on at 2,500 feet to permit gas to be used for drilling wells. It has about 50,000,000 cubic feet volume. In same district Ohio Oil Company has a 20,000,000 cubic feet gas well at about 1,500 feet.

Kasoming Oil Company's first well in Salt Creek field is being drilled in, showing good. Thirteen rigs are up and material for ten more is on ground, to develop 280 acres, just approved under new lease law.

Northwestern railroad using all black oil produced at Lander for engines, paying $1.75 a barrel. Midwest Refining Company met the raise of 25 cents.

TULSA, Aug. 2.—Marland Refining Company's wildcat, one mile in advance of production to the south, in Ponca field, Kay county, is a 100-barrel well in sand found at 2,175 feet.

Flesher Petroleum Company's No. 5, in the northwest of Sec. 12-21-11, in Osage reservation, is making 200 barrels natural from Tucker sand found at 1,798 feet.

TULSA, Aug. 2.—Cosden Oil & Gas Company's No. 1 in Sec. 31-18-5, northwest extension of Cushing field, is making 400 barrels, 3 feet in Wheeler sand, found at 2,962 feet. This is offset to White Oil Corporation's well, the first Wheeler sand producer in this field. In Jennings field, A. D. Morton's No. 10 Armstrong, in Sec. 34-20-7, is making 1,600 barrels in Bartlesville sand. Same operator's No. 3 Carney, same section, is good for 7 barrels. J. B. Grives recently sold this acreage consisting of about 260 acres and 1,000 barrels of Bartlesville sand production to Morton for what is understood to have been $1,500,000.

Kentucky Production In June Shows Slight Increase Over Total For May

By Special Correspondent

LEXINGTON, KY., Aug. 2.—Kentucky produced during June 733,570.92 barrels of oil, according to reports filed with the State Tax Commission. The detailed statement follows: American Producing & Refining Company, 21,673.47 barrels; Cumberland Pipe Line Company, 313,011.50 barrels; C. E. Daugherty & Company, 95.70 barrels; Indian Refining Company, 177,313.47 barrels; Old Dominion Oil Company, 45.361.97 barrels; Neha Refining Company, 4,940.99 barrels; Eastern Gulf Oil Company, 11,200.29 barrels; Warren Oil Company of Pennsylvania, 9,452.61 barrels; National Refining Company, 30,338.17 barrels; Wood Oil Company, 457.80 barrels; Swiss Pipe Line Company, 8,402.52 barrels; Daniel Boone Oil Company, 458.17 barrels; Great Southern Refining Company, 110,864.26 barrels. The counties produced as follows: Allen, 87,084.05 barrels; Bath, 1,030.54 barrels; Estill, 94,134.96 barrels; Floyd, 271.98 barrels; Jackson, 182.02 barrels; Johnson, 1,642.87 barrels; Lawrence, 17,400.63 barrels; Lee, 436,754.87 barrels; Lincoln, 710.26 barrels; Magoffin, 3,093.68 barrels; Menifee, 19,470.62 barrels; Morgan, 1,384.90 barrels; McCreary, 774.94 barrels; Powell, 27,960.12 barrels; Warren, 16,243.05 barrels; Wayne, 14,537.48 barrels; Whitley, 112.82 barrels; Wolfe, 10,780.23 barrels.

Barney Calvert reports the biggest well of the week completed by Benedict & Hutchins, on the Henry Reeder lease, Simpson county, worth from 800 to 1,000 barrels.

The Clark Petroleum Company, No. 11, A. B. Hoskins lease, Lee county, is in for 70 barrels.

The High Gravity Oil Company has reached a depth of 1,300 feet in its well on the J. Taylor Day lease, Magoffin county. This is the first well of this company on the lease. The company is now moving a rig on to the Cooper lease, Magoffin county. In Warren county, on the Nichols lease, the High Gravity is down 400 feet.

Upper and others report No. 8, Foster lease, Simpson county, is in at over 30 barrels. No. 1 is now making 30 barrels, on the same lease.

The Mose Wall well No. 1, Logan county, reached sand at 535 feet and is worth 20 barrels. No 2 is down 700 feet.

Bert Thompson well No. 1, Jackson lease, Hancock county, is making 25 barrels. Oil was found at 635 feet.

Wallace Groer and associates have a 50-barreler on the Mary Jenkins lease, Warren county. No. 2 is spudding.

The Harris Syndicate has a 100-barrel well on the Duke lease, Allen county.

The White Plains Oil Company reports No. 13, Bill Tabor lease, Gainesville pool, Allen county, at 50 barrels. Oil was found at 400 feet. The same company has completed No. 3, S. S. Kemp lease, Allen county, at 100 barrels. The same company reports No. 1, J. S. Straight lease, Allen county, at 10 barrels, and another 10-barreler on the A. V. Frost lease, Allen county.

C. Phelps has a 12-barrel well on the T. K. Brown lease, Allen county.

The Florence Oil Company's No. 4, C. A. Wright lease, Allen county, is in at 483 feet, and is worth 10 barrels.

The Swiss Oil Corporation reports No. 2, Trabue heirs' lease, Lee county, is a 20-barreler.

The Superior Oil Corporation has a 10-barreler at No. 82, Hall-Burke lease, Lee county.

The Petroleum Exploration Company reports a 5-barreler at No. 2, Hogg lease, Lee county.

The Ohio Fuel Oil Company's No. 45, J. D. Smythe lease, Powell county, is making 5 barrels.

Emmanuel Barrick's No. 17, J. L. Edwards lease, and Parson and others' No. 2, Luther Young lease, both in Estill county, are 5-barrelers.

The Wideman Oil Company has a 20-barrel well at No. 2, Eureka Coal Company lease, Estill county.

The Big Elk Oil Company has a 12-barrel well at No. 12, Dorsey Ratcliff lease, Menifee county.

Gourley & Carson's No. 3, W. K. Wells lease, Menifee county, is a 12-barreler.

Stein & Johnson have completed No. 4, Tarrants lease, Warren county, at 450 feet. The well is reported a good one, but the official capacity has not been determined.

The Wood Oil Company's No .1, Grant Frost lease, Wayne county, is worth 5 barrels.

T. W. Overman several weeks ago drilled in what he thought was a dry hole in Barren county, in the Moulder section, near the Warren county line. The casing was removed Thursday, when it was found thirty feet of oil stood in it. The well will now be shot.

Well No. 1, Bud McGinnis lease, Warren county, owned by J. & E. Martsolf, was shot and is reported at 50 barrels.

The Martin Oil Company has a 100-barreler, on the Jackson lease, Warren county.

The Minerva Oil & Gas Company has a 50-barrel well on the Ennis lease, Warren county. This was No. 2; No. 1 is a 25-barreler.

Stein & Johnson have a 500-barrel well on the Tarrants lease, Warren county. They have another flowing well, which has been put on the pump, but its capacity has not been reported on.

The Patterson Oil Syndicate shot well No. 2, Willoughby lease, Warren county, and it is showing up good.

Eastern Operators Get Fair Producers

By Special Correspondent

PITTSBURGH, Aug. 2.—Fair-sized oil wells were completed in the Eastern field last week. However, no new extension was tapped and known areas are supplying all the production. To the Hope Natural Gas Company fell one of the week's best producers. It is a second test on the Werner farm in the Little Laurel Fork section of DeKalb district, Gilmer county, West Virginia, and its daily flow is 130 barrels, this yield following a shot. The pay was tapped in the Maxon sand. The same sand early in the week furnished a 165-barrel producer for the South Penn Oil Company, being that company's No. 4 on the Harden farm in DeKalb district. The South Penn find is located on the Laurel run of Tanners creek, and is 450 feet west of No. 2 on the same farm. A third good producer, also a Maxon sand find, is the Philadelphia Company's No. 2 on the Crites farm in the same neighborhood. The Philadelphia Company well produced 108 barrels the first 24 hours. It is 1,000 feet southeast of the Hope Natural Gas Company's well.

Other West Virginia wells of importance included the following: E. M. Treat Oil & Gas Company, 15 barrels at No. 4 on the Collins farm in Clay district, Ritchie county. New Wilmington Oil & Gas Corporation, 20 barrels in the second salt sand, on the Collins farm in Jefferson district, Pleasants county; Godfrey L. Cabot, 5 barrels in the Big Injun sand at No. 6 on the Ayers farm on Little Kanawha river, Sherman district, Calhoun county; Richard Elkins, 5 barrels in the Weir sand, at an initial test on the Lee farm, Big Sandy district, Kanawha county; Ohio Fuel Oil Company, 5 barrels in the Weir sand, from No. 2 on the Belcher farm on Elk river, Kanawha district; Philadelphia Company, good showing of oil from a Maxon sand completion near Glenville, on the Kanawha river; Maxon Oil Company, 25 barrels in the Maxon sand, from a second test on the Hunt farm in Church district.

Many Ohio Completions

Operations in Ohio also were successful, especially in the deep sand. A. H. Heisey & Company, glass manufacturers, drilled No. 3 on the Wickham farm in Hanover township, Licking county, thru the Clinton sand, and got a 70-barrel producer. Also in Hanover township, the Edward H. Everett Company's No. 14 produced 35 barrels the first 24 hours. The Pure Oil Company struck a 40-barrel producer at its No. 3 on the Guthridge farm in Hopewell township, Licking county. Another Clinton sand well, Whitehall & Heasley's No. 3 on the Wickham farm in that section is holding up at 90 barrels an hour. The Chartiers Oil Company shot its No. 149, which gave promise of being a good producer, but the casing collapsed.

Berea grit territory is under development and furnishing some very nice producers. In Cross Creek township, Jefferson county, E. T. Castner has just drilled No. 3 on the L. Winters farm into the producing formation and showing for a very good well, better than No. 2 on the Jefferson County Infirmary Farm, which is still holding up at 50 barrels a day. Up to the present time the Infirmary farm has completed the best producers.

In Warren township, Washington county, one-third of a mile south of the wells on the F. W. Benedict farm on Turkey Hen Run, F. L. Lauck & Company have a fair Big Injun sand gasser at a test on the James Anderson farm. In the Cow Run district, Lawrence township, the Otto Oil Company has drilled a second test on the Josephine Vanway farm thru the Berea grit and it is showing for a six-barrel pumper.

In the southwest quarter of Sec. 24, Rush Creek township, Fairfield county, the Carter Oil Company in conjunction with other interests, has completed a test on the Mary Sanderson and C. E. Grove farm. The well produced 40 barrels the first 12 hours after a shot in the Clinton sand.

Oklahoma-Kansas Production Down; Kansas "Wildcat" A Gasser

Staff Special
TULSA, July 30

CRUDE oil production in Oklahoma and Kansas shows a decided decline from last week's levels, particularly in Oklahoma. The first slump recorded in Oklahoma since the present drilling campaign was inaugurated in the fore part of the year. Total daily production for both states for the past week was 381,400 barrels, nearly 20,000 barrels shy of the 400,000-barrel mark expected to be attained by operators in these states.

Oklahoma's daily production for the past week shows a loss of roughly 10,000 barrels over last week's figures. The average daily production for the entire state during the past trade week was 288,650 barrels divided among the following fields: Cushing, 34,500 barrels; Healdton, 30,000 barrels; Hewitt, 24,150 barrels; other fields, 200,000 barrels.

Figures for daily production of the state of Kansas shows a falling off of 2,350 barrels daily over last week's record, due to a large extent to the fluctuating of production in the Eldorado-Peabody-Elbing field. Production figures for the past week are as follows: Eldorado-Peabody-Elbing, 64,550 barrels; Augusta, 11,000 barrels; other fields, 17,200 barrels; total 92,750 barrels.

Development of the Week

The most important occurrence in Kansas from the developing standpoint of Kansas operators is the discovery of a 5,000,000-foot gas well by the Traders Oil & Gas Company in Seward county, four miles west of Liberal. This well, drilled on the Doles farm, in the northwest corner of the southwest of the northeast of the northwest of Sec. 3-35S-34W, is just north of the Oklahoma line. Sand was found at 2,800 feet, and it is producing from a sandy lime formation which makes its value doubtful.

In Oklahoma, production from the breaks in the Mississippi lime held the spot-light during the past week. In the northwest extension of the Cushing field, Payne county, the Shaffer Oil & Refining Company's test in the southeast corner of the northwest of Sec. 19-18-5E, missed the Skinner, Bartlesvillle and Tucker sands, but found the top of a pay sand in the second break in the Mississippi lime at 3,911 feet, and is making 1,000,000 feet of wet gas, with indications pointing toward a commercial producer.

In the western Osage country, near Hominy, another well producing from a break in the Mississippi lime is credited with an initial daily production of 6,000 barrels, and in the Jennings pool, on the border line between Creek and Pawnee counties, a 1,500-barrel well has been completed.

Greater Okmulgee District

Average daily pipe line runs for the month of June for this district, which includes Okmulgee county and a portion of Muskogee and Okfuskee counties, was 43,705 barrels. Daily pipe line runs, by companies, were as follows:

Prairie Pipe Line Co.	4,904
Cosden Pipe Line Co.	16,607
Indiahoma Refg. Co.	4,735
Texas Pipe Line Co.	4,495
Lake Park Refg. Co.	2,636
Producers & Refiners Corp.	2,390
Empire Pipe Line Co.	2,289
Oklahoma Prod. & Refg. Corp.	1,245
Gulf Pipe Line Co.	1,022
Transcontinental Oil Co.	944
Sinclair-Cudahy Pipe Line	913
Pierce-Fordyce	137
Okmulgee Prod. & Refg. Co.	43
Shaffer Oil & Refg. Co.	325
Crown Pipe Line Co.	18
Allied Refining Co.	2
Total	43,705

The above production is coming from 4,371 wells in this producing area, which makes an average of 9.9 barrels per well, approximately. While pipe line runs of Cosden Pipe Line Company show the largest daily runs, the large majority of production from the Phillipsville pool is credited to this company to prevent duplication.

Completions in this district show but little out of the ordinary. However, several minor extensions of proven limits of small pools have been recorded. The largest completion of the week was the Atlantic Petroleum Corporation's No. 14 on the Bearhead allotment in Sec. 19-15-11, which is making 650 barrels at 41 feet in the Wilcox sand found at 3,094 feet. It was given a light shot.

North of production, the Barbara Oil Company's test on the McIntosh farm in the southwest corner of the northwest of the southwest of Sec. 35-14-12, is making 300 barrels in sand found from 1,947-1,954 feet, and northeast of Okmulgee, Brewer et al have a 25-barrel well on the Checote farm in the northeast corner of Sec. 2-13-13 after a 40-quart shot in the sand found from 1,378-1,395 feet. It is slightly in advance of production.

Probably the greatest surprise of the week in this district was the completion of a 400-barrel well by the Oklahoma Central Oil Company in the northeast corner of the southeast of the northeast of Sec. 22-14-11, southwest of Beggs in the Phillipsville pool. This well is a southwestern offset to the Margay Oil Company's small well in Sec. 23-14-11, that went into water, and indicates a clear definition of the proven area of the Phillipsville pool in this direction.

Extension of Cushing Field

In Sec. 36-18-4E, W. T. Hales et al's test, a mile west and a half mile south of the proven area which was showing for a good well four feet in sand found at 3,274 feet, is having water trouble and is shut down temporarily. It is believed that the water is coming from behind the pipe and this test is expected to prove a commercial producer.

This territory, which has been producing from the Skinner, Bartlesville and Tucker horizons, has apparently another producing level as the Shaffer Oil & Refining Company's test in the southeast corner of the northwest of Sec. 19-18-5E failed to encounter the producing horizon of these sands but is making 1,000,000 feet of wet gas in a sand believed to be the second break in the Mississippi lime found at 3,911 feet. It will be drilled deeper.

The Amerada Oil Company (Lord Cowdrey interests of England, formerly Pierson) test on the Hibbard farm in the southeast corner of the southwest of the northeast of Sec. 29-18-5, is making 150 barrels in sand found from 3,284-3,293 feet, drilling was stopped at 3,303 feet.

In this district, Livingston Oil Corporation has evidently an edge well in their No. 1 Hibbard in the southwest corner of the southeast of the southwest of Sec. 20-18-5, which found sand from 3,212-3,230 feet and is standing full of oil.

Kellyville-Bristow District

Misener & Steele No. 2 Stephens farm in the center of the north line of the northwest of the southeast of Sec. 23-15-10 is making 400 barrels in sand found at 3,024 feet. This is the largest well recorded for this district during the past week.

In the northeast corner of the northwest of Sec. 11-15-10, the Selby Oil & Gas ompany has completed its No. 3 Thomas farm as a 40-barrel well after a shot in sand found at 3,097-3,112 feet. This is the second Wilcox sand producer in this particular area.

Development in this territory will be given an added impetus by the completion of railroad connections with the town of Slick. Heretofore, oil-field equipment has been shipped to Kellyville and Bristow which has caused more or less delay.

Hewitt

The Carter Oil Company, which is the largest operator in the Hewitt field of Carter county, has completed its No. 1 on the Poland farm in Sec. 23-4S-2W for 500 barrels in sand found at 2,228 feet. This marks a slight extension of the proven area of this field as it is one location east of the Carter Oil Company's No. 1 on the Hamilton farm, which was completed at 2,268 feet and is making 185 barrels.

The largest completions for the week in this field were: Westheimer & Daube's No. 7 on the Isabelle farm in Sec. 22-4S-2W which is making 500 barrels in sand found from 1,881-1,892 feet; and the Wolverine Oil Company No. 44, in the northwest corner of the northeast of the southeast of the northwest of Sec. 22-4S-2W, which is making 400 barrels from a 1,200-foot horizon.

Empire Pool—Stephens County

This pool, which showed in its early days of development all the indications of a dependable source of supply of crude oil, has, within the last month or so, made a rather miserable showing and operators

now see but little likelihood in this territory producing an appreciable supply of crude oil. Recent completons have been characterized by small oil wells and but ordinary gas wells.

The Margay Oil Company's No. 2 on the Burke farm, in the northeast corner of the souhtwest of the northwest of Sec. 4-2S-8W, found a sand from 1,849-1,856 feet that had a slight showing of oil but not enough to make a commercial producer and will be drilled deeper.

Kansas

Kansas production is showing an exceptional amount of wildcatting, the result of which is the opening of a number of more or less important pools. The last one to be opened is a territory four miles west of Liberal, in Seward county. The test is making 5,000,000 feet of gas with a sandy lime formation found at 2,800 feet. It may, however, presage a new field as the formation indicates that this test is producing from a broken horizon.

In the Elbing field, the Pure Oil Company (formerly Ohio Cities Gas Company) has a failure in their Nielson test in the northeast quarter of Sec. 4-23-4. This test was abandoned at 2,870 feet. The test of the Gypsy Oil Company and Phillips Petroleum Company on the Scully farm in Sec. 11-24-5, which promised the opening of a new pool in this district, is apparently a failure. A slight show of oil was found at 2,422 feet but drilling deeper developed water trouble. It will be abandoned.

Will Carry On Thoro Study Of Oil Shale

By Special Correspondent

WASHINGTON, Aug. 2.—American oil shales, rich in quantity but apparently poor in quality in comparison with the shales of Scotland, are going to be subjected to steady and orderly scientific investigation by the Bureau of Mines this year. That is not to say that the work done thus far has been of no value. The contrary is the fact, but now the accumulation of data is such that work done from this time forward will be more concentrated and directed at a comparatively small phase of the subject.

The starting point is the fact that American and Scotch shales when given the same treatment yield results that are not at all similar. The product from American shales, when treated the same as Scotch shales is not, generally speaking, so satisfactory as the product of Scotch shales when treated by the processes that have been developed during fifty years of commercial value of the product, the bureau has learned.

It is practically a demonstrated fact that American shales must be given an American treatment differing from the Scotch, unless it is to be admitted as demonstrated that the quantitatively richer shales of the United States are really inferior to the Scotch. In a broad way of speaking American shales from the Rocky mountain section of the country will yield one barrel of crude, so-called, for each ton of rock treated. Scotch shales produce about 100 gallons for each retort charge of four and a half tons, the data collected shows.

There is not a drop of petroleum in the oil shales, altho, to draw inferences from the prospectuses of shale retorting companies, would lead one to infer that shale is a rock that holds petroleum much as oil sand contains petroleum.

All that shale contains is "the makin's." When heated there is such a reaction that the product would pass inspection as crude petroleum. So far as the oil-using public is concerned, the product from a retorting of shale is crude petroleum. It must be refined, but the process is more elaborate and therefore more expensive than the refining of well oil.

Getting substitutes from shale for the products that are now obtained from well oil is akin, in a commercial sense, of getting blood from a stone or a turnip. In Scotland the thing is done. What is done in Scotland, in an industrial sense, is about the same as the operation of a successful peanut stand, in comparison with the work of any one of the standard companies. Scotland's shale extracting, in comparison with what would have to be done to make American shales a complete substitute for the petroleum industry, is less than a peanut stand proposition.

Cost of 1,000 Barrel Plant

A plant treating 1,000 tons of shale a day, and thereby obtaining 1,000 barrels a day, pre-war would have cost, according to estimates of engineers, from $1,000,000 to $5,000,000. Engineers could not come anywhere near each other in their estimates.

Assuming that shale retorting plants would have about as many breakdowns, strikes and other untoward things as other industrial plants, it was estimated by the Bureau of Mines, more than a year ago, that it would take at least 1,300 retorting plants to furnish a complete substitution for the well oil now consumed in this country. Assuming that each would cost only $3,000,000 the total bill would be only $3,900,000,000.

That investment would displace the investment in wells and prospecting, exclusive of the cost of the shale lands from which the primary raw material would be drawn.

As a substitute or even a mild competitor the oil shale industry, therefore, is not yet even a speck on the horizon for the most powerful telescope. But it is the only known potential substitute because the product of retorting shale is the only half-way satisfactory substitute for well oil. The destructive distillation of coal is not regarded as a substitute by many petroleum technologists. Only the uninformed consider alcohol as a possible substitute, quantitatively, for gasoline. It may be used as one of the constituents for a synthetic fuel, but not as an any way near complete substitute.

The serious, orderly and concentrated attack upon the oil shale problem is to be undertaken by the Bureau of Mines in co-operation with the state of Colorado. Martin J. Gavin, a refinery engineer in the Bureau, and Leslie R. Sharp, a chemical engineer employed by Colorado, have designed and installed a retort, to be used in the research work. It is not intended to be on a commercial scale, but is believed to be capable of giving a thoro test of the possibilities.

A laboratory for testing the shales to be used, physically and chemically, has also been set up. Shale from the De Beque field in Colorado that yields about 42 gallons to the ton, is to be tried out.

Primarily the testing is to be done to determine the effect of variable factors in retorting, on the quantity and quality of the product. In the language that is used outside of technical schools, the object is to find out what happens when retorting is done with intense and rapid heating of the shale, in comparison with the use of slow and low temperatures.

Heat, probably is the chief variable factor. The first object therefore, is to ascertain the effect on the product of the rate of heating to a definite final temperature. That is to say that assuming the final temperature to be desired is 3,000 degrees, will it be better to attain that in one hour or ten?

Points of Experiment

The next thing to be determined is the effect on the product of the thickness of the layer of shale in the retort. Is a layer of six inches or one of six feet, the better practice. The third is the size of the particles of shale, whether they should be the size of peas or of cobblestones. The fourth is as to whether the retorting should be done in vacuum or reduced pressure; the next whether it should be done above atmospheric pressure, and if so, at what pressure. The sixth is steam atmosphere at various pressures and temperatures. Seventh other atmospheres, such as carbon dioxide, carbon monoxide, hydrogen, illuminating gas or any one of half a dozen other things that suggest themselves.

The final variable factor effect to be determined is that actual temperature reached during the various tests.

The great object, as before remarked, is to find the conditions under which the treatment of shale will give the best crude. Nature manufactured the crude that comes from wells. If shale is to be the substitute for nature in the production of what is now the primary raw material, then the best factory practice must be determined before there can be any real progress toward the goal—that of finding something, soon, to supplement the supply of well oil.

Careful work along the lines indicated, the experiment men believe should give answers to the question whether oils of different qualities formed from shales consecutively as their boiling points are reached, as is contended by those who hold to the fractional reduction theory, or does the shale yield a single, more or less uniform crude oil, thruout the course of distillation.

That is the big question on that phase of the subject. If different oils are produced at the different boiling points, then it is possible that the refining of shale oil may be simplified and economies produced because, if what the retort man is seeking may be attained early in the process, what would be the use of carrying it to the point where the shale is "spent" and good for nothing at all, not even for road-making, as Scotch retorters have found, to their sorrow, because they must spend good money to get rid of their spent shale.

It is doubted whether all the determinations set forth as desirable can be made during the year with the personnel and money available for the work. Congress is inclined to believe that the talk about the consumption of oil outrunning the production is bunk. Therefore it has thus far resisted all efforts to have it appropriate enough money to enable the Bureau of Mines or the Geological Survey to go at the question in a way that will bring results in a comparatively short time.

Retrenchment And Quiet Operations Feature Texas Development

Staff Special
HOUSTON Aug. 1

ASIDE from the continued holding up rel Abrams "wildcat," about three-of the Texas Company's 25,000-bar-quarters of a mile northwest from earlier West Columbia development, the week has been a quiet one in the Texas fields. Elsewhere in the Gulf Coastal territory there has been no development of significance and in north Texas, if anything, the situation is quieter than ever before.

Aside from the new wells recently completed northwest of Rising Star, in southwestern Eastland county, there has been nothing to indicate a revival of interest in the black lime producing area, except that continued flush completions are being made in the vicinity of Breckenridge and to the north of that town, in Stephens county, which adjoins Eastland.

In the Wichita Falls, sand country district of north Texas, the only completions of significance are in the southeast Burk-burnett, or so-called Texhoma 1,200-foot pay area and the Kemp-Munger-Allen territory, the latter southwest of Iowa Park and across the Wichita river, near the Archer county line. Such significant completions as there have been in these two districts, however, have been failures which mark danger-posts, the relatively few producing wells brought in being of only 25 to 100 barrels, initial daily production, and in the K-M-A territory they have shown only a few feet of sand, a condition similar to that shown by earlier erratic wells.

After showing for a good well offsetting the original Hillborn of H. V. Foster et al, in the Rising Star territory of southwestern Eastland county, the Invincible Oil Corporation's Shook bridged over and its worth on final completion is unknown. It started off with a head of about 200 barrels. Considered in conjuction with the Hitt well of Hoffman & Collum, a half mile north and a little east, which started off doing 70 barrels an hour, and the No. 2 Hillborn, in the southwest corner of the 160-acre tract, which made 100 barrels an hour at the start, the Shook was due for important consideration. Another well in this general territory that is showing oil and gas, that of the Rising Star Production Company, gave this territory importance as a producing area over the last ten days, but there has been little trading as a result.

Operations in the black lime country of Texas are for the first time in a position to develop along more rational lines such territory as that surrounding the several Rising Star wells, although not enough drilling has been done to tell just what relation one part of the structure bears to the other. A year ago, such wells as the second Hillborn and that of Hoffman & Collum would have brought about feverish lease trading on a basis of not less than $2,000 to $3,000 an acre bonus, whereas, under the present conditions, there was little trading and the principal excitement was on the part of local chambers of commerce in Eastland county towns that proceeded to get busy with propaganda.

Getting Out of Ranger

The temper of the operators in the black lime country is partially shown by a reference to drilling reports that indicate the abandonment of rigs and locations on the part of a number of the principal companies, in addition to the completion of small and unprofitable wells as well as actual failures. Some idea of such retrenchment in operations is shown in the Ranger pool proper, where Sinclair Oil & Gas Company has abandoned location for No. 2 Barnes; No. 6 B. L. Danley was a failure at 3,494 feet; No 11 B. L. Danley is shut down at 2,718 feet; No. 3 W. T. Davis is an abandoned rig; No. 5 an abandoned location, and No. 3 Thompson is an abandoned rig.

In the John York survey of Ranger, once the most prolific part of the field, Texas Pacific Coal & Oil Company has abandoned rigs for Nos. 8, 17, 24 and 2-B J. E. Butler; No. 17 G. E. Norwood, on a tract where the largest well in the Ranger pool was completed more than a year ago for 11,000 barrels daily, maximum, is a 20-barrel pumper after a 60-quart shot at 3,460-3,475 feet, total depth 3,505 feet, and No. 30 on the same lease which was shot with 100 quarts at 3,450-3,490 feet, made a 25-barrel pumper. Texas Pacific Coal & Oil Company has also abandoned rigs for No. 19 and 20 Floyd Brewer, about four miles south of the town of Ranger in another part of the field, also rig for No. 5 on the Beidleman tract. No. 2 C. G. Barker is a failure at 3,357 feet.

Other Ranger completions, scattered over the field generally and indicating the general trend of finished wells at the present time, include the Albers Oil Company's No. 6 J. W. Turner, in the so-called Pleasant Grove district, at the west end of the Ranger development, which was abandoned after a 200-quart shot at 3,445-3,494 feet, total depth 3,609 feet; Ardizzone-Braden Oil Company's No. 3 Kincade, north of the town of Eastland, had the top of the lime at 3,186-3,206 feet and was making 260 barrels while still drilling at 3,235 feet; Humble Oil & Refining Company's No. 1 Hagen, shot with 80 quarts at 3,396-3,528 feet, is producing 20 barrels; Leon Oil Company's No. 2 J. R. Allen is pumping 30 barrels at 3,530 feet and in the northwestern part of Eastland county the New Domain (South Penn) Oil Company's No. 1 E. J. Ward is a 100-barrel producer after a shot of 180 quarts at 3,124-3,170 feet, having been drilled to total depth of 3,983 feet. Prairie Oil & Gas Company's No. 5 E. R. Hanks, 3,347-3,517 feet, is producing 30 barrels; North American Oil & Refining Company's No. 1 C. U. Connellee is shut down at 3.802 feet and the W. C. Bumgartner of Ross, Goss & Fletcher found the top of the lime at 3,452 feet but was abandoned at 3,770 feet.

Prairie Oil & Gas Company, originally the principal operator at Ranger, having taken over 50-50 drilling contracts with the Texas Pacific Coal & Oil Company at the beginning of Ranger development, paying in addition millions of dollars in bonuses, is again reported to be taking on acreage in Eastland and Stephens counties. There has been no official confirmation of the transaction, which, however, is regarded as accurate in usually well-informed quarters. It is explained in these quarters that the Prairie, which still has 40,000 barrels daily pipe line capacity out of the black lime territory, hopes thru more careful operations and under less irksome conditions to salvage a part of its earlier investment which it would be impossible for it to do otherwise. The latest transaction is said to have been made on a royalty basis, without bonus to the Texas Pacific Coal & Oil Company, which has borne half of the operating expense of 50-50 development in the earlier disastrous Ranger development.

Stephen's County Outlook Glum

Scattered operations in Stephens county, particularly those north of and adjacent to the town of Breckenridge, where a number of large flush wells have been brought in recently, continues to be the bright spot of the black lime country, but in Stephens county the rapid depletion that went on at Ranger is apparent also, and the question is now raised in conservative circles whether any operating company active in any part of the black lime area, not excluding the Gulf Production Company, with its thousands of acres of cheap leases, will be able to pay back its investment.

That the Texas Company, which also holds thousands of acres of cheap Stephens county leases, is making every effort to retrench is indicated to these students of operations by the fact that it has not only pulled out a large number of drilling rigs, said in some quarters to be as many as 65, but it is also sub-leasing and selling acreage and offers have been made to supply purchasers with drilling equipment from the Parks warehouse of the Texas Company.

Such is the temper of the black lime country, altho Stephens county at the present time is near its peak of daily average production with roughly 61,880 barrels daily going into the pipe lines, principally from the Breckenridge pool, as the Caddo development quieted down months ago. Daily average pipe line runs from the Breckenridge territory over a 10-day period just closed, showed the Humble moving out roundly 9,000 barrels; the Prairie 8,480 barrels; the Gulf, 22,120 barrels; the Texas Company, 14,635 barrels, of which about 6,000 barrels was purchased oil, the remainder being its own production; the Magnolia Petroleum Company, 6,540 barrels and the Sinclair and Pierce Companies less than 1,200 barrels daily between them.

Stocks on crude oil in steel storage in the General Ranger territory which includes both Stephens and Eastland (Ranger) counties, together with the Desdemona district, (southeast of Ranger) totalled, July 1, last, approximately 8,700,000 barrels; in round figures divided between the several principal interests as follows: Prairie, 3,500,000 barrels; Magnolia, 1,800,000 barrels; Humble, 1,400,000 barrels; Sinclair, 800,000 barrels; Texas Company, 382,000 barrels; Gulf, 490,000 barrels, the difference between the total of these companies and the total amount in steel storage being the amount of miscellaneous crude held by other and smaller interests.

Value of Structure Tested

One test that is now drilling along the Eastland-Stephens county line that will be watched with unusual interest, despite the general apathy existing in the black lime territory, is located in the southeast corner of the north half of Sec. 384, Southern Pacific railroad land, on the E. W. Chesley tract. The royalty on this tract is held by 21 of the leading geologists of the country, who paid their own money for their interest and who have pronounced the test to be located on the "most perfect" structure that is known to be in the Central Mineral Belt of Texas.

The Chesley test will be a scale to the future measurements of the real value that can be placed on structure in that part of Texas, it is generally agreed. The test is being promoted and financed by E. W. Fyshe of Montreal, Canada, and R. H. Kilpatrick and associates of Fort Worth, on acreage acquired from the Gulf and Cosden Companies, which with the Texas Company and the Lone Star Oil & Gas Company hold nearby acreage.

In Erath county, beyond the once highly flush and now virtually depleted Desdemona district, the Erath County Oil Syndicate's No. 1 Perkins test has been shut down at 4,110 feet. Texas Pacific Coal & Oil Company's No. 1 Christian, drilled for a deep test to 3,780 feet, is a failure and the same company's No. 1 Miller was plugged at 3,236 feet.

Half way between the black lime producing area and the Wichita Falls district development, where it was at one time considered possible pay might be picked up in either the sand or lime formation, the Cosden Oil & Gas Company has finally abandoned its Victor Stewart test at 4,557 feet and its No. 1 Cherryholmes at 3,918 feet. In Young county, which adjoins Stephens on the north, and in the south end of which the Panhandle Producing & Refining Company recently brought in a 700-barrel sand level well, the Cosden test on the Mary E. Timmons tract has been finally abandoned at 4,006 feet.

K-M-A Operations Hard Hit

In the Kamp-Munger-Allen division of the Greater Wichita Falls district, No. 3 on the "discovery" tract of the Kemp-Munger-Allen Oil Company made a 10-barrel well at 1,759-1,754 feet and No. 4 is being rigged up to pump at 1,760-1,764 feet; Texhoma Oil & Refining Company's No. 2 S. I. Munger is standardizing at 1,744 feet; Dundee Oil & Development Company's No. 1 N. V. Tidwell, recently reported as a slightly larger well, has been finally completed for 20 barrels at 1,860-1,869 feet; Keen & Woolf Oil Company's No. 4 Munger is a 200-barrel well at 1,742-1,747 feet; Rowe Oil Company's No. 1 M. Parker was a failure at 2,200 feet; Texas United and Allen Oil Company's No. 1 S. I. Munger was a salt water failure at 1,764 feet and the No. 1 G. Lynsky test of J. W. Kinney was abandoned at 1,740 feet; aside from the Keen & Woolf producing well about the only other fairly good completion was the No. 1 Kemp & Kempner of the Texhoma Oil & Refining Company, which made 200 barrels initial production at 1,761-1,764 feet.

In the southeast Burkburnett district (Texhoma pool) the Red Devil Oil & Refining Company's No. 1 J. E. Roller was dry and abandoned at 1,210 feet and the Texanna test on the A. F. Dodson lease was a failure at 1,315 feet.

West of Ranger, in that part of Texas surfaced by Permian age formation, where drilling has been under way for months, the General Oil Company's Glasscock county test, No. 1 McDowell, is shut down and waiting at a depth below 2,600 feet, after getting a showing of oil; in Mitchell county, the Underwriters Producing & Refining Company test, reached a total depth of 2,528 feet and is standing with a bridged hole after a 600-quart shot at 2,348-2,498 feet; in Nolan county, the J. A. Jordan test of W. M. Turner et al is shut down at 4,407 feet and the Wichita-Nolan Oil & Gas Company's No. 1 Kuteman is shut down at 3,520 feet.

Elsewhere in north and west Texas "wildcatting" continues without showing for anything of unusual significance, except that in Carson county, where the Gulf Production Company recently developed a gasser in the Texas Panhandle, on the S. B. Burnett ranch, the flow has increased from the original 10,000,000 cubic feet to approximately 50,000,000 cubic feet daily.

Gulf Coastal Operations

The Texas Company's No. 1 Abrams, three-quarters of a mile northwest of earlier production at West Columbia, Brazoria county, delivered to the pipe line July 28 a total of 22,262 barrels in addition to approximately 4,000 barrels of crude oil that was turned into earthen storage. This phenomenal well, producing heavy crude, had so far failed to show any of the salt water common to West Columbia production, and only a small amount of sand, altho the temperature of the oil was variable, from 105 to 118 degrees. The Texas Company No. 39 Hogg, another West Columbia completion was good for a 140-barrel pumper.

At Hull, which is the only other Gulf Coastal pool showing particular activity, the Monarch Oil & Refining Company's No. 6 Hankamer-Peveto is a 200-barrel well, making 23.6 gravity oil at 2,136 feet; the Liberty County Oil Company's Liberty county "wildcat," No. 1 on the Palmer 100 acres, is flowing 100 barrels of salt water without any oil at 2,440 feet.

Texas Company's No. 1 Nancy Fuller joint fee test at Saratoga has been abandoned in lime rock at 3,279 feet; Bradley Oil Company's No. 24 Moore at Humble is a failure and two current Humble completions are the Indemnity Oil & Refining Company's No. 1 Westheimer, which will be put on the pump, and the Gulf Coast Oil Corporation's No. 23 fee, a pumper at 1,270 feet.

KANSAS CITY, Aug. 2.—The Emblem Oil Company has taken over the offices formerly occupied by the Western Petroleum Company, at 612 Republic building, Kansas City. The Emblem company will be the exclusive marketers of Kanotex products, and also will do a general business in connection with the distribution of petroleum products of all kinds. The affairs of the company will be in charge of V. E. Sandberg, formerly sales manager for the Kanotex Refining Company, at Wichita, Kans.

Mead Irwin will assist Mr. Sandberg. Mr. Irwin was formerly with Anderson & Gustafson, Inc., of this city.

Benjamin S. Terry, president of the A. W. Harris Oil Company of Providence, R. I., died July 13.

Get the habit of turning to the Oil Industry Exchange page each week. Business opportunities of various kinds and bargains in second-hand equipment are always to be found there.

Panuco Operators Join To Check Salt Water

Staff Special

HOUSTON, Aug. 1.—Operators in the Panuco field of Mexico have united in efforts to plug off salt water following additional encroachment upon producing properties reported from Tampico. The situation has developed to a stage sufficiently alarming that a meeting of oil company managers was called to consider conditions, resulting in the action taken.

Tal Vez Oil Company's No. 3 well on the Maza Beuna Vista, offsetting No. 2 Zuniga of the Mexican Gulf Oil Company, in the Panuco district, was drilled to a depth of 2,236 feet, with a showing of salt water, since which time it is being cemented. The Tal Vez offset to the Gulf's Nos. 2 and 3 Zuniga, was drilled to 2,504 feet with a small showing of oil, but upon deeper drilling to the 2,600-foot level salt water developed and this is being cemented off.

The Gulf Company has closed in its Nos. 1 and 2 Zuniga until successful cementing off of the Tal Vez wells. No. 1 finished depth 2,250 feet, was a 1,450-barrel well and No. 2, total depth 2,278 feet, making 2,680 barrels. No. 3 Zuniga of the Gulf, originally completed in 1914, was a 10,000-barrel well. It was closed in also, showing about 10 per cent b. s. and a little water.

No. 1 Maza Beuna Vista of the Tal Vez Oil Company was rated, July 1, last, good for 1,300 barrels at 2,137 feet, the production report crediting No. 2 with 5,000 barrels at 2,160 feet.

Texas Company of Mexico, S. A., No. 2 Mateo Cicero, rated good for 4,500 barrels at 2,066 feet, July 1, also being an old completion, began showing 4.6 per cent b. s., July 21, last. It and the Gulf's No. 2 Zuniga are directly offset by the No. 3 well of the Tal Vez.

Cia. Inversiones de Aztlan, S. A., under which name the Magnolia Petroleum Company operates in Mexico, brought in a 15,000-barrel well in No. 1 Dominguez, Salvasuche district at 2,200 feet about five miles from the point where salt water has again appeared in the Panuco territory. No. 4 Obando of the Texas Company of Mexico, S.. A., is rated a 25,000-barrel well at 2,010 feet.

WASHINGTON, Aug. 2.—Work of the Bureau of Mines in the oil and gas fields of Texas and Louisiana, has been placed in charge of H. W. Bell, vice R. E. Collom, with headquarters at Dallas, Texas, it has been announced by F. G. Cottrell, director of the bureau. Mr. Bell will be assisted by W. G. Snyder, expert driller, and John B. Kerr, petroleum engineer.

Mr. Bell has spent the last three and one-half years as deputy supervisor with the California State Mining Bureau and is a graduate engineer who has had much practical experience in the oil fields. Mr. Collom, who has been in temporary charge of the Dallas office, is resuming his work in the San Francisco office of the bureau.

LEXINGTON, KY., Aug. 2.—The city commissioners of Covington, Ky., have passed an ordinance compelling all persons engaged in selling oil stock to pay a license fee.

Second Boisseau Test In Bossier Parish Gets Salt Water

By Special Correspondent

SHREVEPORT, LA., July 31.—Failure of "wildcat" operations in north Louisiana to develop any fresh showing of oil, coupled with quiet operations in southern Arkansas, where the S. S. Hunter test of the Standard Oil Company of Louisiana and the Invincible Oil Corporation is still rated a 100-barrel well, has left this general territory quiet except for the watching of scattered tests in advance of old production.

Aside from other recently reported deep tests in the vicinity of Homer, and elsewhere in north Louisiana, which have failed to pick up pay strata, three more are reported from Bienville parish, which adjoins Claiborne, in which latter geographical division the Homer pool is located.

Ringgold Oil & Gas Company has temporarily abandoned No. 1 Moseley, in Sec. 5-15-9, at 3,045 feet. A. C. Scott No. 1 Evans, Sec. 32-16-8, at 1,900 feet, and the Superior Oil & Gas Company No. 1 Jordan at 2,260 feet in Sec. 30-16-5.

In Bossier parish, east of Caddo development, where Bob Boisseau et al pumped a little oil and water at 2,607 feet in the No. 1 Fullilove test, Sec. 21-19-13, another test has been drilled on the Fullilove tract, the second being in Sec. 22. Casing is being pulled to abandon No. 2 after getting salt water at 2,763 feet.

Fifty wells completed, including 17 abandonments, 4 gassers and 29 producers, with combined initial production 4,135 barrels, was the record in north Louisiana fields, including east Texas territory, during the week just closed. In number of completions, the record is regarded as probably the largest in the history of north Louisiana.

An interesting feature of the list of failures is that they were widely scattered, most of them being in strictly wildcat areas. They were divided as follows: 2 in Webster parish, 1 in Caddo, 2 in Claiborne (Homer district), 3 in Bossier parish, 4 in Bull Bayou (2 each in Red River and DeSoto parishes), 1 in Ouachita parish, and 4 in east Texas (being 1 each in the counties of Shelby, Rusk, Gregg and Panola). In fact, of 5 wells completed in east Texas all were failures except one, the Bethany Oil & Gas Company's Gibson No. 1 in Harrison county, which at 1,056 feet came in a gasser of 18,000,000 cubic feet capacity.

Initial Production Drops

The record of the week just closed surpasses that of the previous week in number of completions, showing a majority of 9, but in amount of initial production the preceding week showed a better margin to the extent of 1,716 barrels, also 4 less in failures.

With 19 producing completions, the Homer district had a better record than any other district, its initial production totaling 3,485 barrels, against 4,071 barrels the previous week from 18 producers. There were only 2 failures in the Homer district against 6 the week before.

The Bull Bayou district showed 7 producers with combined initial yield 515 barrels, also 4 failures, against 12 completions, including 9 producers, yielding 1,445 barrels the previous week. And Caddo reported 3 producers making 135 barrels and only 1 failure, compared with the previous week's record of 6 producers yielding 335 barrels.

A review of the week's record shows that the best individual showing was that of the Gilliland Oil Company, which completed 5 wells, 3 in Homer and 2 in Bull Bayou, all being producers, the total initial yield being 390 barrels. But while the Gilliland had more completions, the Gulf Refining Company with 4 completions, all producers, 3 in Homer and 1 in Bull Bayou, beat it in new production, the amount being 760 barrels. The White Oil Corporation, with 2 completions, both in Homer, however, had the largest initial yield of any single company. The two wells had combined yield of 800 barrels, and one of them, the Oakes No. 16, in Sec. 30-21-7, was the largest producer of the week, producing 600 barrels initial yield at 1,400 feet.

Sec. 30-21-7 was one of the most productive of the week, in the Homer district. In it the Arkansas Natural Gas Company got one producer, Shaw No. 99, at 1,402 feet, 50 barrels; the Gilliland Oil Company got Shaw A-8 and Shaw A-14, making 25 barrels and 250 barrels, respectively; and the White Oil Corporation got the above mentioned record-breaking 600-barrel well.

Sec. 18-21-7 tied for first place. In it Curtis Bros. & Nelson completed Garrett Nos. 2 and 3, the former at 1,480 feet, and the latter at 1,520 feet, making 50 barrels and 200 barrels, respectively; F. C. Henderson et al completed Garrett No. 10 at 1,398 feet, making 370 barrels; and the Standard Oil Company got its only completion of the week, Lowenberg No. 20, at 1,400 feet, with initial yield 500 barrels. In amount of initial yield this Sec. 18-21-7 held first position during the week, exceeding 30-21-7 by about 200 barrels, tho in each there were 4 producers.

In Sec. 31-21-7 there were two completions by the Frost Oil Company, Chatman Nos. 4 and 12, at 1,380 feet and 1,373 feet, making 10 barrels and 100 barrels, respectively, and in the same section the Rowe Oil Corporation got a producer, Hardy No. 4, at 1,430 feet, 10 barrels, and also got a failure, Hardy No. 2, at 1,450 feet.

In Sec. 17-21-7 Sinclair Oil & Gas Company got two good producers, and in 19-21-7 the Gulf got two of its four producers of the week.

The only section in Bull Bayou yielding two producers was 6-12-10, the Caddo Central Oil & Fuel Company and Gilliland Company getting the completions, 50 barrels and 40 barrels, respectively, at 2,795 feet and 2,830 feet.

By districts, the week's completions were as follows:

Webster Parish

Seldern et al, Carter-Wenk No. 1, 30-22-10, at 2,340 feet, salt water, abandoned.

Gilbert Williams, Parham No. 2, in 18-18-8, at 2,840 feet, salt water, abandoned.

Caddo Parish

J. W. Barnes et al, Murray No. 2, in 28-21-15, at 2,213 feet, 100 barrels.

Bedillion et al, Ward No. 1, in 31-20-15, at 2,350 feet, salt water, abandoned.

Isaac Muslow, Liebman, No. 1, in 31-21-15, at 2,200 feet, 15 barrels.

Old Settlers' Oil Company, Lynn No. 21, in 12-21-15, at 2,310 feet, 20 barrels.

Claiborne Parish

Arkansas Natural Gas Company, Shaw No. 99, in 30-21-7, at 1,402 feet, 50 barrels.

Curtis Bros. & Nelson, Garrett No. 2, in 18-21-7, at 1,480 feet, 50 barrels.

Curtis Bros. & Nelson, Garrett No. 3, in 18-21-7, at 1,520 feet, 200 barrels.

Frost Oil Company, Chatman No. 4, in 31-21-7, at 1,380 feet, 10 barrels.

Frost Oil Company, Chatman No. 12, in 31-21-7, at 1,373 feet, 100 barrels.

Gilliland Oil Company, Shaw A-8, in 30-21-7, at 2,062 feet, 25 barrels.

Gilliland Oil Company, Shaw A-14, in 30-21-7, at 1,361 feet, 250 barrels.

Gilliland Oil Company, Shaw C-6, in 25-21-8, at 2,055 feet, 30 barrels.

Harris Oil Company, Harris No. 1, in 14-20-8, at 1,500 feet, dry, abandoned.

F. C. Henderson et al, Garrett 10, in 18-21-7, at 1,398 feet, 370 barrels.

Rowe Oil Corporation, Hardy No. 2, in 31-21-7, at 1,415 feet, salt water, abandoned.

Rowe Oil Corporation, Hardy No. 4, in 31-21-7, at 1,430 feet, 10 barrels.

Sinclair Oil Company, Garrett No. 2, in 17-21-7, at 1,462 feet, 120 barrels.

Sinclair Oil Company, Garrett 3, in 17-21-7, at 1,458 feet, 130 barrels.

Standard Oil Company, Lowenberg 20, in 18-21-7, at 1,400 feet, 500 barrels.

Sterrett & Simmons, Featherstone 2, in 20-21-7, at 1,289 feet, 100 barrels.

White Oil Corporation, Oakes No. 16, in 30-21-7, at 1,400 feet, 600 barrels.

White Oil Corporation, Wheaton No. 8, in 23-21-8, 1,387 feet, 200 barrels.

Gulf Refining Company, West 23, in 19-21-7, at 1,294 feet, 157 barrels.

Gulf Refining Company, West 17, in 20-21-7, at 1,413 feet, 423 barrels.

Gulf Refining Company, Langston 26, in 19-21-7, at 1,293 feet, 160 barrels.

Bossier Parish

Sinclair Oil Company, Washington No. 1, in 36-18-12, at 3,215 feet, salt water, abandoned.

Boisseau et al, Fullilove No. 2, in 22-19-13, at 2,762 feet, salt water, abandoned.

Louisiana Gas & Fuel Company, Trezevant No. 1 in 17-16-11, at 829 feet, 23,000,000 cubic feet gas.

Texas Company, Giddens No. 3, in 15-16-11, at 2,561 feet, salt water, abandoned.

DeSoto Parish

T. Gartlan, Furman No. 1, in 36-15-14, at 3,218 feet, salt water, abandoned.

Texas-Standard Oil Company, Sutherland No. 1, in 19-12-14, at 2,840 feet, 6,000,000 cubic feet gas.

Commodore Oil Company, DeMoss No. 1, in 34-13-11, at 2,800 feet, salt water.

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Giles & Herring, Bonds No. 1, in 22-12-11, at 2,725 feet, 2,000,000 cubic feet gas.

Red River Parish

Belchic & Laskey, Texas & Pacific Railway No. 7, in 31-13-10, at 2,784 feet, 160 barrels.

Belchic & Laskey, Texas & Pacific Railway No. 11, in 5-12-10, 2,788 feet, 100 barrels and 3,000,000 cubic feet gas.

Caddo Central Oil & Refining Company, Nelson No. 5, in 6-12-10, at 2,795 feet, 50 barrels.

Continental Asphalt & Petroleum Company, Robinson B-6, in 32-13-10, at 2,800 feet, 100 barrels.

Gilliland Oil Company, Nelson No. 2, in 6-12-10, at 2,830 feet, 40 barrels.

Gilliland Oil Company, Nelson A-2, in 32-13-10, at 2,810 feet, 45 barrels.

Sinclair & McCann, Lindsey No. 1, in 19-12-10, at 2,982 feet, salt water, abandoned.

Tex-La-Homa Oil Company, Nelson 9, in 8-12-10, at 1,100 feet, junked, abandoned.

Gulf Refining Company, Jenkins E-25, in 11-12-11, at 2,775 feet, 20 barrels.

Ouachita Parish

Dixie Oil Company, Grayberg No. 1, in 25-16-2-E, 3,520 feet, salt water.

Gregg County, Texas

Percy T. Morgan, Simmons No. 1, in Simmons H. R., at 3,359 feet, dry, abandoned.

Rusk County, Texas

Percy T. Morgan, Baird No. 1, in J. McLain H. R., at 3,519 feet, dry, abandoned.

Shelby County, Texas

National Oil Company, C. M. Adams No. 1, in G. V. Lusk H. R., at 3,024 feet, dry, abandoned.

Harrison County, Texas

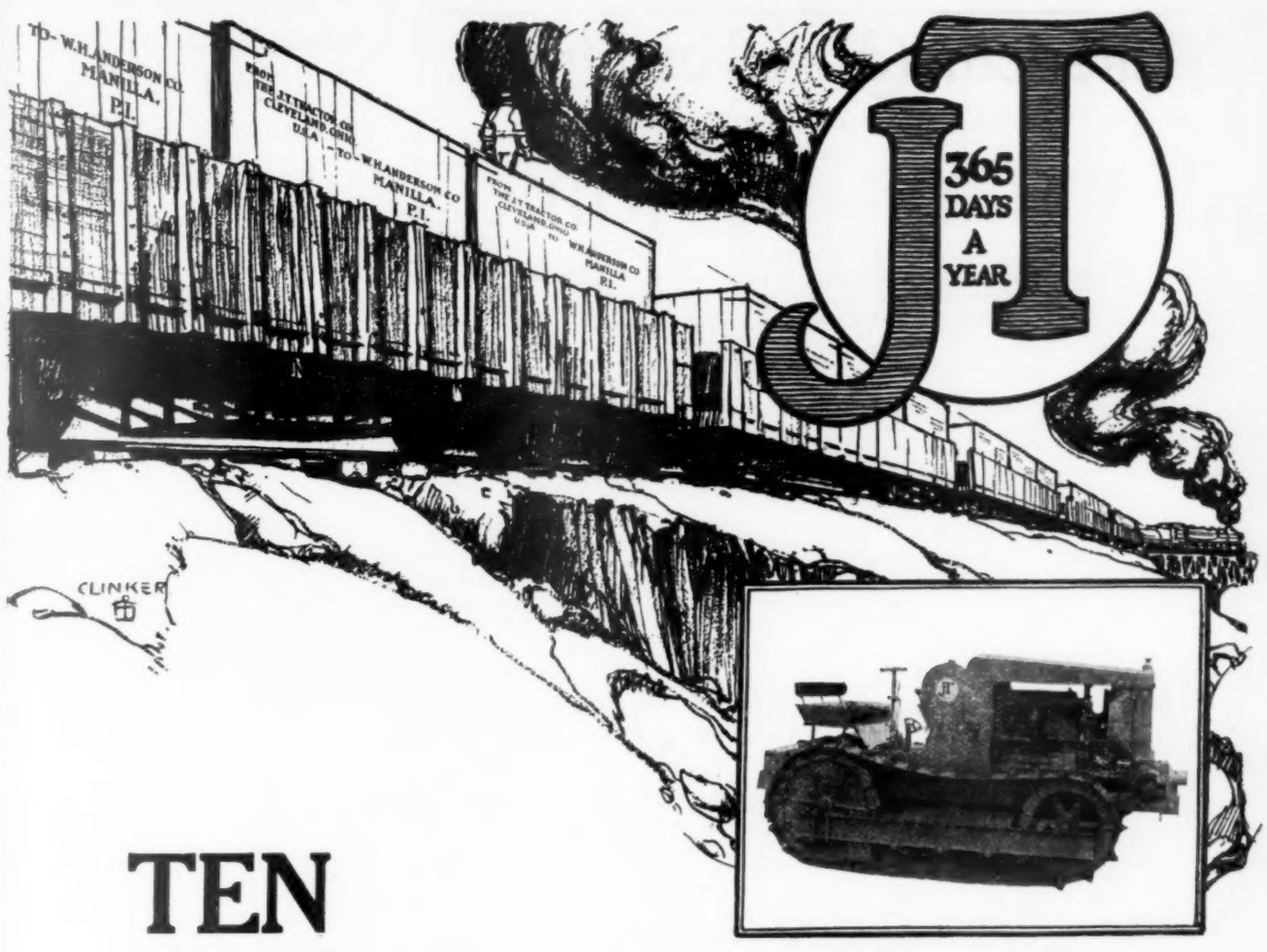
Bethany Oil & Gas Company, Gibson 1, in J. Womack H. R., 1,056 feet, 18,000,000 cubic feet gas.

Panola County, Texas

Transcontinental Oil & Gas Company, Lawrence 1, n M. B. Thompson H. R., 3,100 feet, dry and abandoned.

SHREVEPORT, LA., July 31.—Additional interest in the carbon industry in the Ouachita-Morehouse district, about 100 miles east of Caddo, has been aroused by the report that the Monroe-Louisiana Carbon Company has purchased a tract of eighty acres between Swartz and Wham, on the Missouri Pacific Railroad, Ouachita parish, and has begun the erection of carbon and gasoline extraction plants. It is said to be the company's plan to erect only about 25 burning houses this year, but to enlarge the number next year, with the addition of a gasoline extraction plant. It is also reported that the building of additional burning houses, increasing its total to 52, has been begun by the United Natural Gas & Oil Products Corporation.

TULSA, OKLA., July 29.—Applications have been made for passports to Algiers, Africa, to the United States clerk at Muskogee, by F. D. Davis, D. M. Whitfield and J. E. Jones, oil well drillers. They expect to leave in a short while for north Africa, where they will be employed by a large oil company that is preparing to sink a number of tests in that country. American drilling equipment will be shipped to Africa to be used in sinking these tests.



TEN JT Tractors to Manila

Disassembled and crated to the minimum volume, insured and protected in the finest manner for foreign shipment, ten JT Tractors are now in the holds of liners for the Philippine Islands.

The JT Tractor Company has won recognition as a power in the development and proof of correct ideas of Tractor building. The company is financially strong. From the production standpoint it occupies new buildings of proper design and substantial construction. The equipment is modern and the location is in the best manufacturing district with excellent transportation facilities.

What They Say About JT Performance

Our own confidence in JT Tractors comes from a working experience of ten years in developing and perfecting them. But your confidence will likely be established on what users of JT Tractors say. Here are some recent statements:

(Statement of Harry Vance, Cadiz, Ohio.)
Five "JT" tractors operate for three months with all kinds of street building and maintenance machinery on grades up to 40% with a fuel consumption of 1¼ gallons of kerosene per operating hour. Results satisfactory in every respect.
(Statement of The City of Cleveland, Ohio.)

"JT" digs ditches and builds roads in eight hours equal to three men and eight horses for four days.
(Statement of Velie Motor Sales Co., Peoria, Ill.)

"JT" in a clay pit draws plows and scrapers in conditions impossible for horses or other type of tractors. Pulled a 4-ton stone from its place half imbedded in clay.
(Statement of Sowers Implement & Tractor Co., Boston, Mass.)

The "JT" hauled a 10-ton load of logs on two wagons weighing one ton each four miles over rough roads to the mill.
(Statement of Patenotte Motor Company, New Orleans, La.)

"JT" hauled two thousand thirty-nine board feet of green hardwood logs on two wagons weighing 5,000 pounds, a distance of 4½ miles, in one hour, over roads ranging from swampy land to sharp grade.
(Statement of W. W. Parre Company, (Covington, La.)

"JT" pulled untrimmed oak top log, small end first, through a swamp and up a 40% grade. Log measured 18 inches at butt.
(Statement of A. R. Flinn, Pittsburgh Lumber Company.)

These statements were volunteered by satisfied owners and operators at sundry times and from many locations since the JT Tractor reached the position of steady factory output.

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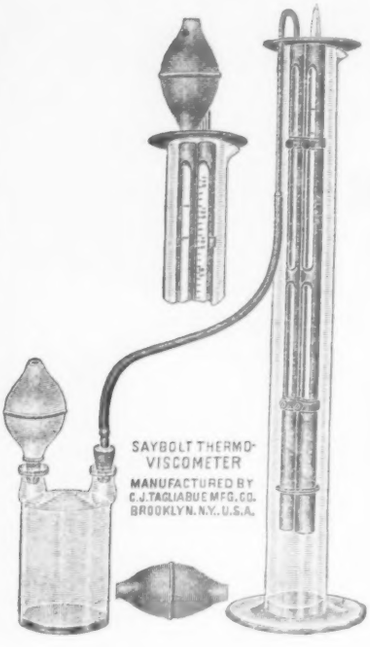

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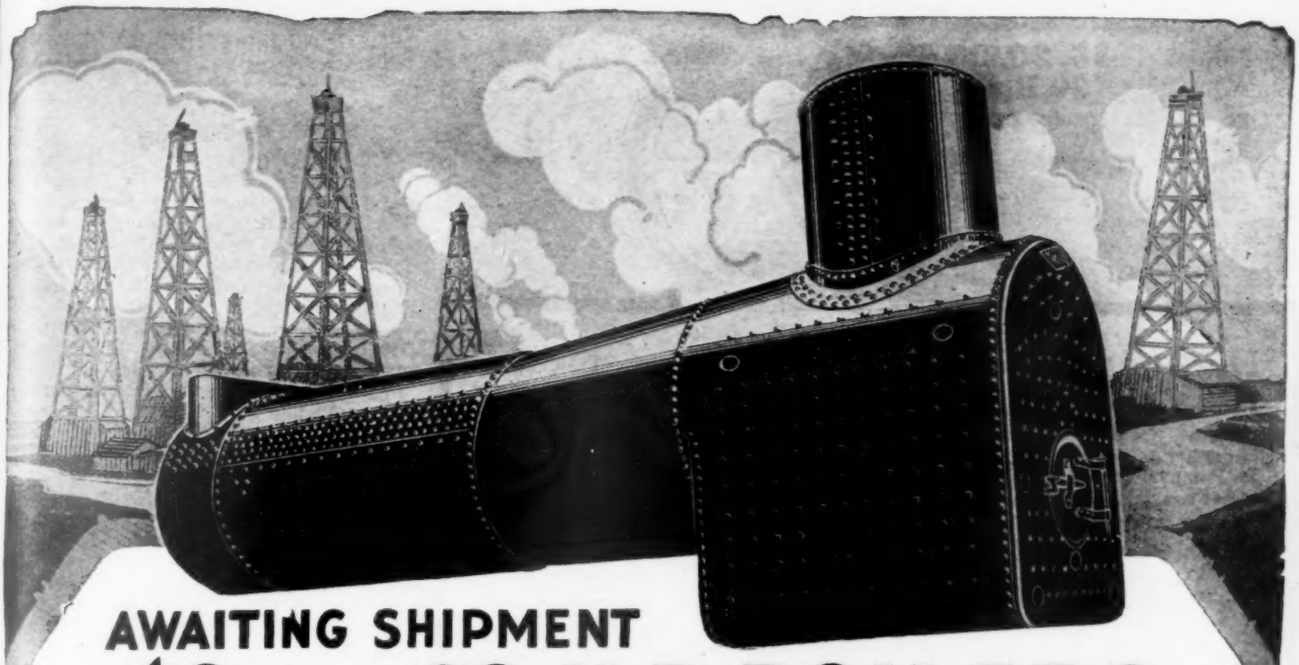
Demand Bureau Men Stay In Oil Fields

WASHINGTON, Aug. 1.—The oil men of the Hewitt, Walters and Comanche fields in Oklahoma have made arrangements with the Bureau of Mines under which F. X. Schwarzenbek will remain on his petroleum engineering work around Ardmore. The Ardmore chamber of commerce oil committee has deposited $1,000 to be used as a supplement to the almost exhausted funds of Oklahoma, appropriated by the legislature of the state, to be used in cooperation with the Bureau of Mines.

Bureau officials are inclined to pin medals on themselves for that expression of worth in the work of the bureau. Schwarzenbek and T. E. Swigart, for more than a year have been in the three fields mentioned giving help to the oil producers to understand the sub-surface problems with which they will have to deal to obtain the maximum quantity of oil.

The two engineers who know the practical work as well as the scientific, have made peg models of the field, showing the log of each well on a peg instead of in cross section. They found, among other things, that some wells had been drilled clear thru the sand and others not to it, and that other wells were in danger of flooding the whole country roundabout. Since they began working there the production of many wells have been increased. When the Oklahoma appropriation was about exhausted Schwarzenbek was told to come to Bartlesville and write up his Walters report. The Ardmore oil men decided that he should be kept there. They raised the $1,000, altho the bureau said only about $750 would be needed, and said that, if necessary, more money would be put into the same bank. The object of the bureau has been to get men with both practical experience and technical training to make studies and show that petroleum engineers, who know both the books and the fields, can be of value in the producing end of the game. The bureau has frowned on engineers who have had no practical experience in the fields, especially those who are inclined to think they could "hand it down" to a veteran driller who might not know what the books said about formations and things like that. It has dug up, when possible, youngsters, with technical training, who were willing to go into the fields, take hold at anything so as to learn the business. A son of Dr. Holmes, one time director of the bureau, who has just been graduated from a technical college has been put into a job, not a position, in the Wyoming field. If he makes good as a workman in the field he will be given a job in the bureau. That's the idea the technical men in the bureau have as to how a college graduate can fit himself for preparing material for the benefit of the industry.

Calloused hands, obtained in the oil fields, and a college diploma are credentials that will be considered when young men want to get into the scientific branch of the government in which the petroleum technologists have a say.



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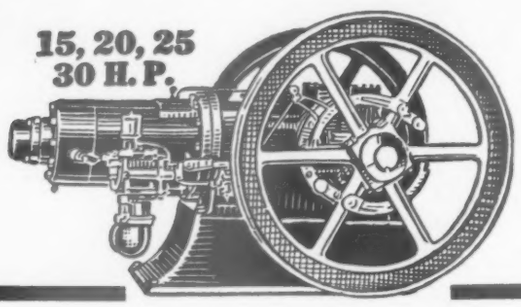

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Genuine Jenkins Valves are known by the name and Jenkins "Diamond Mark"—at supply houses everywhere.

Figure 106

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Jenkins Valves

Tampico Strike Off; Oil Again Moving

Staff Special

HOUSTON, July 31.—The strike situation at Tampico, which for a time retarded oil shipments from Mexico has been broken, according to advices reaching Houston. Shipments of Mexican oil are going out regularly and there was no considerable amount of embarrassment to oil companies, which, however, were threatened when the strike first broke July 10. Only a small number of Mexican laborers employed at the oil company terminals were affected and none of the more important workers.

Shipping was delayed slightly at the outset, however, at the terminals of the Mexican Gulf Oil Company, the Texas Company of Mexico, S. A., and the Transcontinental Petroleum Company under which name the Standard of New Jersey operates in Mexico. The general strike affecting the city of Tampico has not ended officially, but the return to Tampico of General Manuel Pelaez has had a salutary effect, he hav-

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SHREVEPORT, LA., July 31.—According to advices from the state capital, at Baton Rouge, the new Louisiana "blue sky" law, placing the sale of securities, stocks and bonds under regulation of the State Securities Commission, becomes effective August 13. The law requires dealers of securities, stocks and bonds to register with the Commission and to furnish detailed information regarding their character of business and that of the securities offered.

SHREVEPORT, LA., July 31.—Among the features planned for the Louisiana State Fair, to be held at Shreveport October 28 to November 7, inclusive, is a demonstration of how oil wells are brought in. Altho oil has been discovered in a number of north Louisiana parishes and east Texas counties, the management of the fair realizes that many citizens of this territory have never seen a well "come in," and for their benefit especially the demonstration is being planned by Secretary W. R. Hirsch, of the state fair.

LEXINGTON, KY., Aug. 2.—Harry Lazarus, C. H. Bailey and associates, of Bowling Green, Ky., have sold to the Indian Refining Company and the Ohio Oil Company leases covering 982 acres in the Bailey and McGinniss pools, Warren county, for $182,000. The Ohio Company is drilling on the Lazarus lease and is down over 400 feet. The Indian Refining Company is drilling on the Brizendine lease, in the Bailey pool, which is part of the acreage sold.

The Lick Creek Oil Company has sold 150 acres in leases in Simpson county at $50 an acre.

TULSA, OKLA., July 29.—W. G. Lackey, vice president of the Mississippi Valley Trust Company of St. Louis, has resigned and will become associated with the Marland interests as vice president, with direct supervision of the finances of both the Marland Refining Company and the Kay County Gas Company.

Mata Redonda Sea-Loading Station Seventh Of Kind In Mexico

Staff Special
HOUSTON, July 31

A THIRD pipe line paralleling the two original 10-inch carriers from its Chinampa property to the Mata Redonda sea-loading station is under construction by the Transcontinental Petroleum Company (Standard of New Jersey), which is also now linking up its field properties and the Mata Redonda works with Tampico operating quarters with a private telephone system. A new building planned for headquarters at Tampico will be located directly back of the present location and will extend thru to the American consulate, it is announced in advices reaching Houston from Tampico.

Since recent steps to consolidate all its properties in Mexico under one head, which the Standard of New Jersey is doing thru the making of its East Coast topping plant a part of the Transcontinental company, general headway is being made by this interest as one of the important factors in the districts near Tampico. Its Mata Redonda station was completed only about two months ago and the first full month's shipments of crude moved out in May from the newly equipped sea-loading berths.

Under the system now utilized in loading out oil from the Chinampa and Los Naranjos-Zacamixtle development, pipe lines are laid from the wells to sea-loading berths along the Gulf of Mexico, a distance of from 20 to 40 miles, the oil being pumped into the ships (a mile out in the ocean) thru sea-lines laid on the bed of the Gulf. Prior to this system being utilized all Mexican oil moving out was pumped from the field to Tampico, on the Panuco river, which afforded the harbor facilities.

Besides the Transcontinental, there are six other companies with loading stations and sea-lines operated along the beach between the Panuco and Tuxpam rivers. In the case of the Transcontinental, which recently completed large wells in the Chinampa territory, its terminal is also connected on the north with the Cortez Oil Company pipe line and to the south with that of Cia Metropolitana de Oleoductos, S. A., these companies running a part of the oil.

The transcontinental terminal is along the Tamiahua river, which is bounded also by the Chijol canal and the Rio de Tanhuijo,, the strip of beach where the ocean terminals are located constituting an island. Because of such conditions at the lagoon terminal, the pulling of the sea-lines was, in part, accomplished by their being laid in sections and their being coupled up while in the process of pulling.

Original Shipments In April

First shipments of crude from Mata Redonda were in April, with May the first full month of the operation of terminal, these shipments being made several months after the facilities for sea-loading had been first completed. The Lamp, a Standard Oil Company of New Jersey employes' magazine, thus describes the operation of pulling the sea-lines, which were placed on dollies preparatory to this operation:

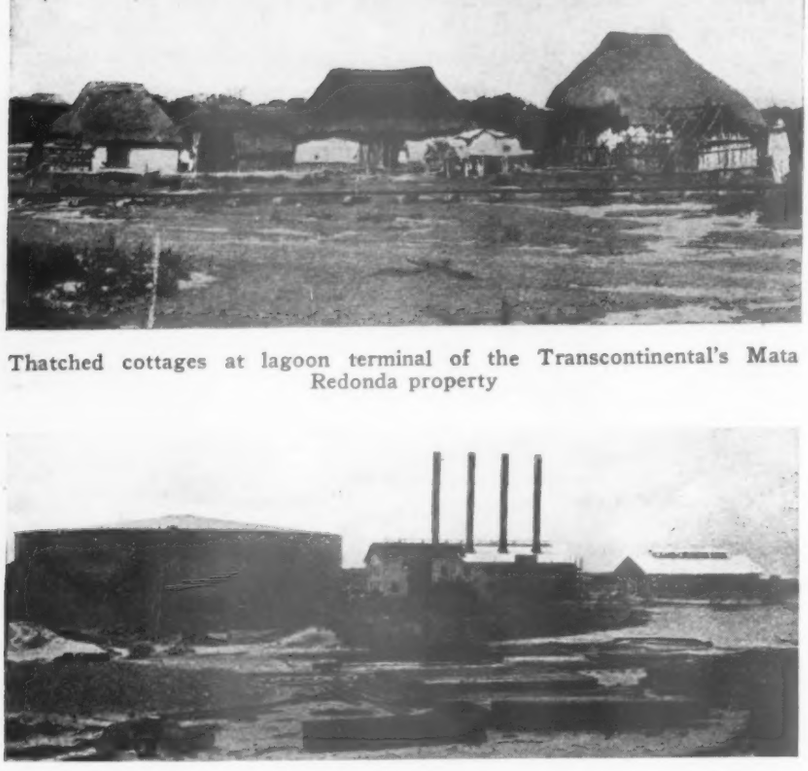
"The last lines pulled on the beach were the two ten-inch lines of the Cia Transcontinental de Petroleo, S. A. Preparations were started about a month before the lines were pulled in about the following order: a 36-inch gauge track was built and carefully aligned. A sharp drop

Sea line ready to be pulled for actual operation in loading ships a mile at sea, showing tracks and dollies used

Another view of the Mata Redonda pump station and tank farm

Mata Redonda pump station and tank farm before it was completed

Thatched cottages at lagoon terminal of the Transcontinental's Mata Redonda property



Compania Atlantica terminal on the Gulf north of the Transcontinental property, under construction June 25, 1919

was made at the beach end of track and a dolly pit dug and covered with sheet steel, so that as the line was pulled out the dollies would drop off the track on to the sheet steel to be rolled away by men who were waiting for them. It was found that the distance between the beach and the Laguna which bounds the property on the west was only about 5,000 feet, and as the length of the line to be pulled was 6,500 feet, in order to get the 40 feet of water which was required, it became necessary to pull the line in two sections. As there are two lines to a berth this necessitated the laying of two sections of line 5,000 feet (the length of the track) and two additional sections of lines 1,500 feet to make lines 6,500 feet in length when completed. Dollies or small trucks were made in the company's terminal at Tampico, consisting of four wheels under a wooden platform. The first 5,000-feet section of line was thrown on the dollies, which were distributed along the line one to every other joint of pipe. A throat was built of heavy timbers on the beach and lined with sheet steel thru the line passed. This was to prevent it from weaving north or south with the current when being pulled. A sand sled was built on the head of the line to prevent the pipe from burying itself while being pulled. A gasoline drum was tied on the top of the sled to keep the end of the line visible while being drawn out. A tower was built on the beach from which a simple signaling system was operated, controlling the starting, stopping and speed of the vessels pulling the line. Two beacons were put up along the line for guiding the vessels in taking their positions.

"On November 18 everything was ready and the tanker H. L. Pratt arrived at 8 a. m. to pull the lines. The Aguila tug San Nicolo was used to guide the Pratt in the operation. The tanker came in as close to shore as possible and a mooring boat was sent out to bring in the towing hawser, a manila line 12 inches in circumference. On account of the strong current running, the hawser was not brought ashore until 1 p. m. At three o'clock the hawser was tied to the line and the ship started pulling. About 500 feet of line had gone out when a peon let a 2 x 4-inch timber drop on the track and caused six dollies to jump off. These were replaced by six new ones after a delay of 45 minutes and the pulling was resumed. The actual pulling time of the first section was about 15 minutes. The second section of 1,500 feet of line was then thrown on the track on dollies and connected up to the first section with a right and left-hand thread coupling. By the time this work was finished it was 6 p. m. and everything was left in readiness for completing the work the next morning.

"It was thought that after the first section had stood under water for twelve hours during the night it might get badly sanded up and some difficulty might be experienced in getting the line started again. Contrary to this opinion, the second section of the line was pulled the next morning in twelve minutes after getting started without any difficulty. By noon the men had finished letting water in the line, taking off the towing line, etc., and the Pratt went to Palo Blanco, where they pulled a line for the Metropolitan Company in half a day.

"The same operation was repeated for the second line, which was pulled on the same track the next day. The first section of the second line was pulled in fifteen minutes; the second section of the line was thrown on the track and connected up in an hour's time and the pulling of this section was completed in twelve minutes, making twenty-seven minutes' actual pulling time for the complete line.

"After the line is pulled and connected up to the pumps a flexible hose about 150 feet long is attached to the end of the pipe. This hose lies on the bottom of the Gulf when not in use. Its location is shown by buoys attached to the hose. When a ship comes in and is moored, the hose is pulled up and connected to the ship, and when the signal is given, by whistle, the shore pumps are started and oil is pumped thru the line into the ship.

"As a rule, the crude oil is pumped from the shore tanks at its natural temperature, but when greater speed in loading is desired the oil can be heated. Facilities are provided both for heating the crude before it starts on its 22-mile journey from the fields to the tanks on the beach and for raising temperature in the tanks by means of coils thru which exhaust steam is run. The sea water is warm and it rarely becomes necessary to increase the fluidity of the oil to enable the pumps to handle it."

Ask Suggestions For Unloading Tank Cars

NEW YORK, July 31.—Col. B. W. Dunn, of the Bureau of Explosives, has asked for constructive suggestions on the subject of proposed instructions for unloading tank cars of inflammable liquids. His recommendations have been sent to the American Petroleum Institute, which in turn has asked the oil industry for its opinion on the instructions.

The recommendations of Col. Dunn are as follows:

1. Raise safety valve to see if there is any interior pressure in tank. Dome cover must not be removed while such pressure exists.

Where pressure is found it must be reduced by cooling tank with water or relieved by raising and keeping safety valve open.

2. After pressure is released, break seal and remove dome cover as follows:

Screw Type:—Unscrew by placing bar between dome cover lug and knob.

Hinged and Bolted Type:—Loosen all nuts one complete turn and then sufficiently more to open up cover.

Interior Manhole Type:—Carefully remove all dirt and cinders from around cover and then loosen screw in yoke.

3. See that caution signs are placed between switch and first car on siding and left up until car is unloaded and disconnected. Signs must be at least 12 x 15 inches in size and bear the words "STOP"—"Tank Car Connected" or "STOP"—"Men at Work," the word "STOP" being in letters at least four inches high and the other words in letters at least two inches high. The letters must be white on a blue background. If siding is open at both ends signs must be placed at each end.

4. Move valve rod handle in dome back and forth a few times to see that outlet valve in bottom of tank is properly closed and seated.

5. Remove valve cap with suitable wrench, having a pail in position to catch any liquid that may be in outlet nozzle. If large outlet is to be used, remove reducer first loosening set screws. If valve cap or reducer does not unscrew easily, tap lightly with a hammer in an upward direction.

6. Attach unloading connections securely to nozzle or reducer and raise outlet valve by turning valve rod handle in dome.

7. Replace dome cover but do not entirely close so that air may enter tank for venting as follows:

Screw Type:—Engage threads and screw down with wooden block ⅝-inch thick placed against the threads and under outside flange of cover so that when screwed down against this block, the six ½-inch holes bored thru the threads will be wholly exposed.

Ringed and Bolted Type:—Place wooden block ⅝-inch thick under one edge of cover.

Interior Manhole Type:—Tighten up screw in yokes so that cover will be brought up within ½-inch of closed position.

8. When unloading thru bottom of outlet of cars equipped with interior manhole type of dome covers and in all cases where unloading is done thru the dome opening (unless special dome covers are used, provided with safety vents opening and tight connection for discharge outlet), the dome openings must be protected against entrance of sparks or other sources of ignition of vapor by being covered and surrounded with wet burlap. This must be kept damp by replacements or the application of water as needed.

9. Do not throw seals or other substances into the tank. Also care should be taken to avoid spilling any of the contents over car or tank.

10. After tank is unloaded replace dome cover, valve cap and reducer securely.

11. Inflammable placards and railroad defect cards must not be removed.

12. Remove all shipping cards from the car and promptly notify railroad agent when car is empty.

13. Tank cars must not be allowed to stand with unloading connections attached after unloading is completed and employees must be in charge thruout the period of unloading.

14. If necessary to disconnect a tank car during unloading the outlet valve cap must be securely reapplied until unloading is resumed.

Exports From Mexico For Six Months Reach Total Of 57,959,858 Barrels

HOUSTON, July 28.—Altho exports from loading stations in the Tampico territory show a falling off for June from the 11,255,531.93-barrel record set in May, the total movement is still the second largest in the history of the Mexican oil fields, exceeding the volume of shipments in both March and April, each of which totalled in excess of ten million barrels. Petroleum exports for the first half of 1920 total 57,959,858.95 barrels, the Huasteca Petroleum Company heading the list both in the semi-annual and the June monthly figures.

Decreased shipments are shown from May to June by both the Huasteca and the Mexican Eagle (Cia. Mexicana de Petroleo "El Aguila," S. A.), which latter was still second high in the list of exporters for June. Texas Company of Mexico, S. A., moved from fifth to fourth place in June, the Standard of New Jersey dropping back from third to fifth and the Compania Metropolitana de Oleoductos, S. A., taking third rank. Of the Huasteca total 1,889,001.79 barrels consisted of topped oil, the barrelage of crude amounted to 149,159.84 and crude naptha made up the remaining 151,589.32 barrels.

Detailed figures for June, in comparison with other figures since January, constituting a full six months' review of exports from Mexico ports, follow:

Comparative Exports From Mexico

Company	January 1920	February 1920	March 1920	April 1920	May 1920	June 1920
Huasteca Pet. Co.	1,753,564.15	1,626,588.84	2,035,920.24	2,022,806.21	2,416,801.87	2,189,750.95
Penn-Mex. Fuel Co.	749,084.45	155,218.75	628,088.27	881,006.91	378,354.46	260,410.29
Compania Mexicana De Petrolia "El Aguila"	1,013,314.00	1,458,339.00	1,494,784.00	1,382,959.00	1,900,002.00	1,882,549.00
Texas Company of Mexico, S. A.	700,445.67	667,982.62	803,143.42	647,993.88	837,898.73	954,063.53
Cortez Oil Co.	456,286.00	348,792.00	156,079.00	44,239.00	364,129.00	763,445.00
Standard Oil Co. of New Jersey	1,013,750.56	837,078.23	1,729,266.00	1,212,732.96	1,089,587.96	811,015.02
Compania Metropolitana de Oleoductos, S. A.	554,537.08	670,074.33	546,906.29	841,177.23	1,038,411.90	1,010,097.89
East Coast Oil Co. (Southern Pac.)	375,937.27	456,936.03	.....	454,051.11	520,990.85	259,136.47
Freeport Mexican Fuel Oil Co.	375,403.90	570,249.89	930,123.38	722,184.41	595,546.42	683,772.05
Mexican Gulf Oil Company	581,907.37	354,982.47	705,261.77	797,662.00	665,659.45	.....
Pierce Navigation Company	46,999.00	84,420.00	302,165.00	270,180.00	237,529.00	222,830.00
La Corona Oil Co.	66,600.00	110,571.69	286,161.81	272,208.00	270,188.58	71,748.38
National Petroleum Corp.	31,001.72	95,682.50	92,287.99	138,878.43	64,695.32	90,199.79
New England Fuel Oil Co.	97,700.41	.....	30,780.35	63,392.00	70,478.00	111,244.68
Inter-Ocean Oil Co.	34,331.86	68,395.86	54,853.52	34,343.91	38,000.00	35,882.01
Tal-Vez Oil Co.	210,966.17	182,631.62	298,446.36	373,367.53	*371,101.55	32,266.92
National Oil Co.	.....	.....	.....	33,129.30	94,224.00	63,652.47
Terminal Union Co.	.....	.....	.....	.....	59,774.37	.....
Cias. del Agwi, S. A.	.....	.....	.....	.....	186,750.82	322,290.23
Cochrane & Harper	.....	.....	.....	.....	.....	204,625.96
Totals	8,160,829.59	7,677,942.83	10,794,267.40	10,125,442.35	11,200,123.34	10,576,280.64

*Includes 275,680.91 barrels consigned to Cochrane, Harper & Co.

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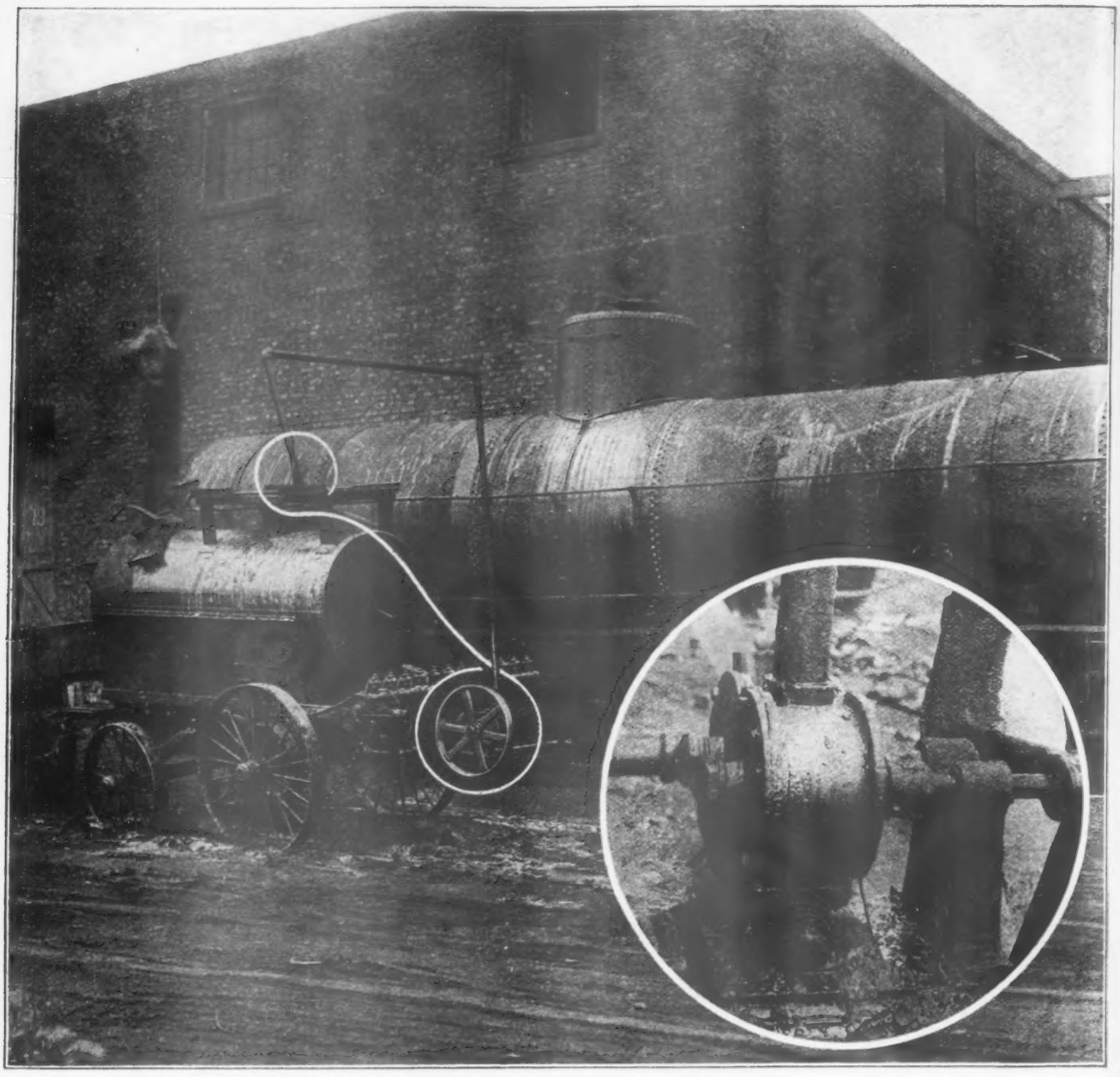

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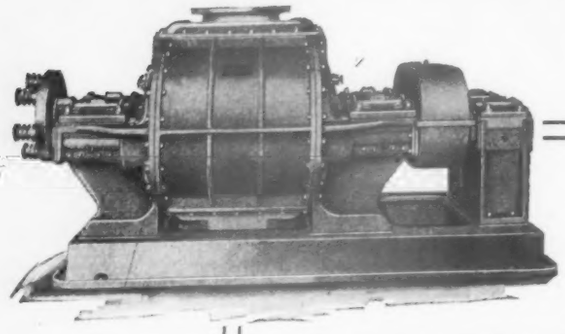

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Navy Officers Not In Accord With Daniels

By Special Correspondent

WASHINGTON, July 28.—With Secretary Daniels in Alaska and Assistant Secretary Roosevelt much occupied in politics, the policy of the navy department with regard to the buying of fuel oil on the Pacific coast, or any other part of the country, it is believed, is something either non-existent, or if it exists, impossible to find. The fact that there is said to be only about a week's supply of fuel oil at the Mare Island navy yard is not viewed with alarm by the officers primarily concerned with the duty of keeping the fuel tanks supplied. They know they can seize oil, in case of necessity.

One of the things discernible here is that the officers who have to enforce the policy of Secretary Daniels, which has been one of ruthlessness on the assumption that sellers of oil on the Pacific coast were not honest, is that, in the end, it will be of no help to the country, to have a feeling of hostility between any industry and the supposed servants of the public, especially when it is obvious that by practically every test that could be devised, it is shown that the price of fuel oil, made in a free market, is much higher than what Secretary Daniels has been offering California refiners.

In other words, there is the minimum of accord between Daniels and those who, because he is their superior, must carry out his idea that the government is entitled to fuel oil at much less than the open market price.

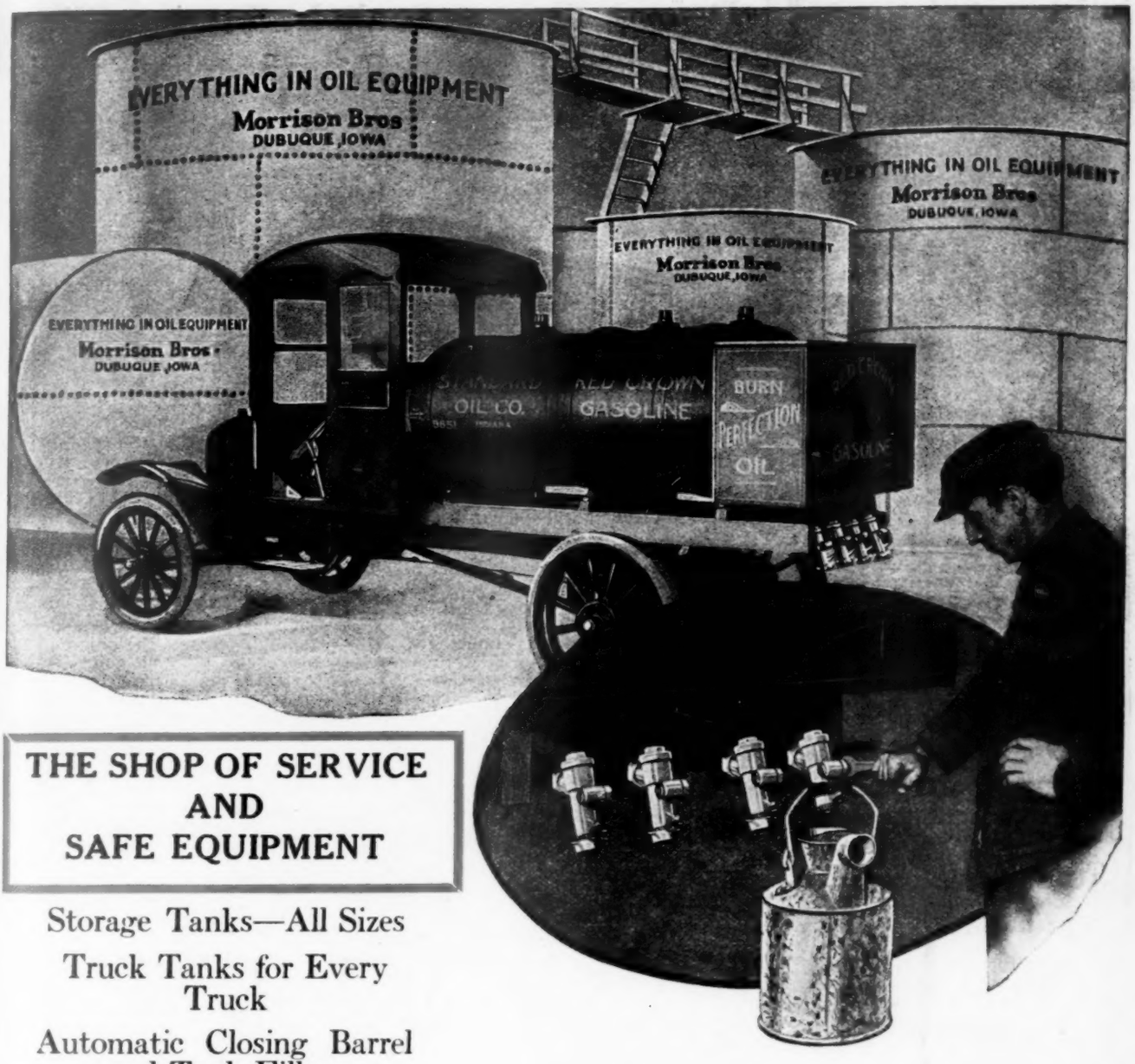
So long as a state of war exists, he will be able to take the oil under the war powers of the President. Even if the state of war did not exist, it is believed, the courts would sanction forcible taking, when done after an offer of what the navy department might consider a reasonable price.

Long continuance of a policy of seizure and the tender of an insufficient price would simply result in forcing prices still higher. The refiners would have to load the expense of caring for the navy upon their other products. That loading would force the market price of fuel oil upward and in the end the government would have to pay more because the courts have always held that the government must pay the fair market price.

The rule is that the government must pay for what it takes, that sum which a reasonable man under no compulsion to sell would take from a man under no constraint to buy.

LEXINGTON, KY., July 26.—On recommendation of D. A. Sachs, Jr., trustee for the W. P. Williams Oil Corporation, all oil and gas leases of the concern, which are located in several eastern Kentucky counties, have been sold by George A. Brent, referee in bankruptcy, to James Artman, of Philadelphia, for $5,950. The leases sold are in Breathitt, Estill, Powell, Johnson, Magoffin, Morgan and Lee counties, mostly in Breathitt. Stockholders who live in New York, where indictments were recently returned against officers of the company, are believed to be behind Artman in the purchase.

If you are looking for slightly used equipment of any kind, turn to the Oil Industry Exchange at the back of this issue.



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Defends Baume Scale In Testing Oil; Defines Difference From Specific Gravity

In order to set at rest some misapprehensions which he says are prevalent among a majority of users of the Baume hydrometer and to define exactly the difference between specific gravity and "Baume gravity," George H. Taber, vice president of the Gulf Refining Company, Pittsburgh, prepared the following paper on the subject.

The paper was originally published in the June, 1920, issue of the Journal of Industrial and Engineering Chemistry. It is reprinted by **National Petroleum News** in the hope that it will be of service in clearing up the minds of some oil men to whom this problem may be troublesome.—Editor.

AFTER the name crude oil and the names of some of its products, the first thing likely to come to the attention of anybody engaging in the petroleum business, or studying it theoretically or practically, is a reference to what is called the "Baume gravity" of the oils; but it is a conservative assertion that a very large majority of the users of the Baume hydrometer and its readings are under some one or more misapprehensions in regard to the instrument, its principles or their application. It is quite likely, as some readers may point out, that the present writer shares in some of these misapprehensions, but, if so, they are self-inflicted and of long standing.

Baume hydrometers are of the constant-weight, variable-volume type. As an aid to understanding what the Baume instrument is, and what it is not, it will be well first to consider the constant-weight, variable-volume specific gravity hydrometer, which it is precisely like except in its stem divisions and numbers.

The basic principle of all hydrometers is that a floating body displaces an amount of liquid equal to its own weight. As the weight of the hydrometer under consideration is constant, the same weight of all liquids is displaced by it when floating freely in them, and the specific gravities of the liquids vary inversely as the volumes displaced, these volumes being indicated by marks on the stem of the hydrometer, accompanied by numbers giving the corresponding specific gravities.

Since the numbers marked on the stem delimit equal increments of specific gravity, and the volumes immersed vary as the reciprocals of these numbers, the successive volumes will necessarily form a harmonic series, the differences between the successive terms of which will increase as the specific gravities decrease; that is, the spaces between the divisions showing equal increments of specific gravity increase in width from the bottom to the top of the stem. The same thing may be stated in another way: namely, if the successive specific gravities marked on the stem be considered as abscissas of a rectangular hyperbola the constant (k) of whose equation equals the volume immersed when the hydrometer is floating in water, the successive total volumes immersed will correspond to the ordinates of the hyperbola.

It will be seen from the preceding paragraph that if, reversing the usual practice, the stem of the specific gravity hydrometer were graduated with equispaced divisions to show the volume immersed, the corresponding specific gravities would not decrease by equal decrements, but these decrements would decrease in amount from the bottom to the top of the stem.

Disregarding the principles upon which the graduation and markings of the stems of Baume hydrometers were originally based, and the object of their adoption, and without going into details as to the differences in scales which have prevailed in the past—some of which still persist—it suffices to state here that Baume scales are now based on mathematical formulas, and that the formula which has the most authority in this country for liquids heavier than water is

$$Be.^{\circ}_{H} = 145 - \frac{145}{\text{Sp. Gr. } 60^{\circ}/60^{\circ}}, \text{ or}$$

$$\text{Sp. Gr. } 60^{\circ}/60^{\circ} = \frac{145}{145 - Be.^{\circ}_{H}};$$

and for liquids lighter than water—

$$Be.^{\circ}_{L} = \frac{140}{\text{Sp. Gr. } 60^{\circ}/60^{\circ}} - 130, \text{ or}$$

$$\text{Sp. Gr. } 60^{\circ}/60^{\circ} = \frac{140}{130 + Be.^{\circ}_{L}},$$

145 being what is called the modulus of the former scale, and 140 that of the latter.

Examining the formula for liquids heavier than water, we see that $Be.^{\circ}_{H}$ = the reciprocal of the specific gravity multiplied by 145, and the product subtracted from 145; and that the greater the specific gravity, the greater the equivalent Be. H degrees. From the formula for liquids lighter than water, we see that $Be.^{\circ}_{L}$ = the reciprocal of the specific gravity multiplied by 140, and the product diminished by 140 less 10; and that the greater the specific gravity, the smaller the equivalent Be. L degrees. The deduction of 10 from the modulus, which is in effect deducting the modulus and adding 10 to the result, shows that water is 10 degrees by this scale, instead of 0 degrees as by the heavy scale.

Since, as previously stated, the specific gravity varies inversely as the volume of liquid displaced, if the stem of a specific gravity hydrometer were divided to show equal increments of immersion, the corresponding specific gravity numbers would form a harmonic series; and since the equivalent Baume degree numbers are reciprocals

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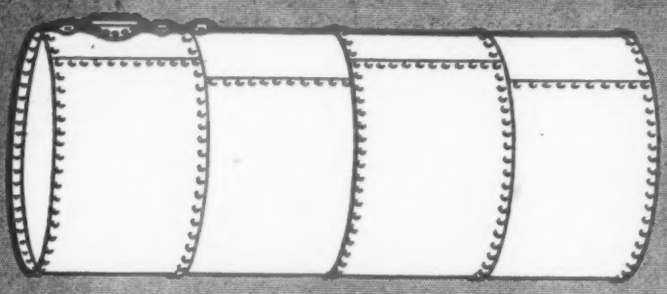

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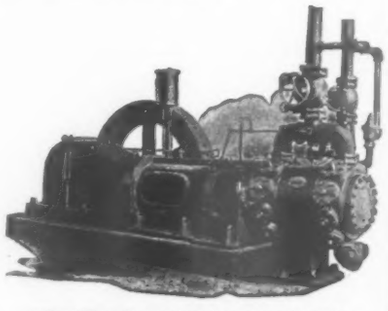

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of a harmonic series of specific gravities, modified only by being multiplied by a constant and added to another constant, they form an arithmetic progression, and if these Baume degree numbers were applied to such a scale, we should have an equispaced scale with equicrescent numbers, or in fact a Baume scale—heavy or light according to the conversion formula used.

The following are some frequently misunderstood points:

1—The name is Baume, not Beaume.

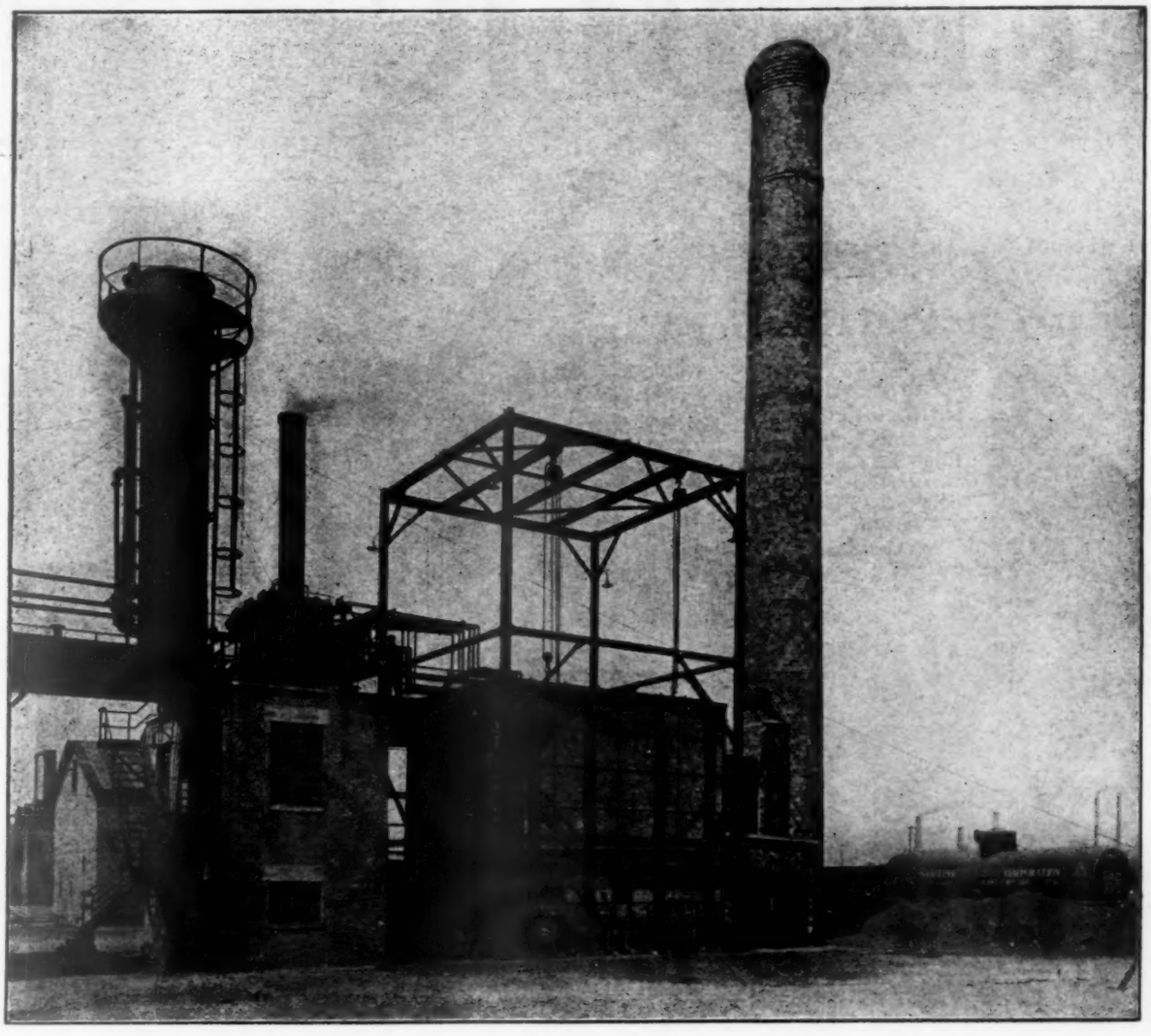
2—Specific gravity numbers are ratios, not degrees. Baume numbers are degrees, not ratios.

3—The Baume scale is not inaccurate, and it is not unscientific. From its equispaced divisions, it is likely to be more correctly divided in the making, the correctness of its graduations can be more easily checked, and almost anyone can interpolate its markings readily by the eye, whereas correct, rapid interpolation between specific gravity graduations is practically impossible. Of course, in significance, Baume degrees are inferior to specific gravity ratios, and it requires one more step in calculation to convert them into pounds per gallon or other absolute density standards; however, the Baume scale has become so fastened to the petroleum business that in all probability the world's supply of crude oil would be exhausted before it could be pried loose.

4—As is well known, the specific gravity of a mixture of equal volumes of two liquids when there is no contraction or expansion of volume from mixing, will be the arithmetic mean of that of each of the two constituents. If the reason for this is not obvious, change the specific gravities of the constituents to pounds per gallon by multiplying each by the number of pounds in a gallon of water at 60 degrees F. Say the results are, respectively, 6 and 8 lbs. per gallon. It is obvious that if 1 gallon weighing 6 lbs. be mixed with 1 gallon weighing 8 lbs., the result will be 2 gallons weighing 14 lbs., 1 gallon of which mixture will weigh 7 lbs., 7 being the arithmetic mean of 6 and 8; and dividing 7 by the number of pounds in a gallon of water, we shall get the specific gravity of the mixture, which it will be seen must be the arithmetic mean of the specific gravities of the two constituents. By an extension of this reasoning it will be seen that the specific gravity of a mixture of any number of constituents in any proportions can be calculated in the same way; in other words, all problems of alligation medial and alligation alternate relating to liquids can be calculated directly to their volumes and specific gravities when there is no contraction or expansion of volume resulting from the mixing.

Contrary, however, to a somewhat generally held opinion, such computations cannot be made by direct use of Baume degrees of either the light or heavy scale, altho when the densities of the liquids are fairly close together the error may not be prohibitive, but the farther apart the constituents are in density, the greater the error. Let us test the simplest case as follows:

Consider that we have equal volumes of two liquids of, respectively, a° Be. L and b° Be. L. Take the arithmetic mean of the Baume degrees of the two constituents, convert this mean into



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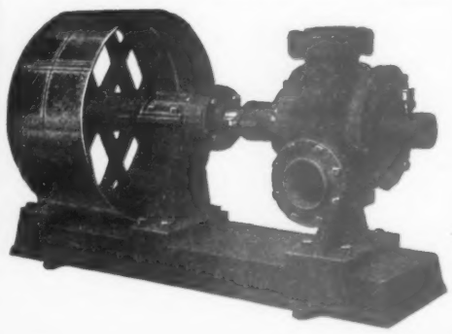

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specific gravity and equate it to the arithmetic mean of the equivalent specific gravities of the two constituents; solve the equation, and ascertain the relation necessary between a and b to make the equation possible.

We have

$$\frac{140}{130 + \frac{a+b}{2}} = \frac{\frac{140}{130+a} + \frac{140}{130+b}}{2}$$

which after expansion and reduction results in

$$a^2 - 2ab + b^2 = 0$$
$$a - b = 0$$
$$a = b$$

or in words, the only case in which the degrees Baume of a mixture of equal volumes of two liquids lighter than water are the arithmetic mean of the degrees Baume of the constituents, is when both are the same. The same result (a=b) would have been obtained if we had taken a° Be.$_H$ and b° Be.$_H$ and made the conversions by the formula for the heavy scale. Consequently, in order to calculate the Baume degrees of a mixture, it is necessary to convert the Baume degrees of the constituents into specific gravities (or weights per volume, like lbs. per gallon), make the calculation on these, and convert the result by the formula into the corresponding Baume degrees.

As a concrete arithmetic example is more convincing to some, and to give an idea of the possible error in averaging Baume degrees, consider a mixture of equal volumes of liquids of 10° Be.$_L$ and 70° Be.$_L$. Averaging them by the Baume degrees (which we have just proved an incorrect method), we should get 40° Be. for the mixture. Averaging them by their equivalent specific gravities 1.000 and 0.700 (the correct way), we get 0.850 specific gravity, equal to 34.7° Be.$_L$.

However, if weights are used instead of volumes, problems in alligation relating to liquids can be performed directly with Baume degrees of either the heavy or light scale, as seen from the following considerations, while they cannot be performed directly with specific gravities. Take the simplest case—say equal weights of two liquids, respectively, 0° Be$_H$ and 95° Be.$_H$. The arithmetic mean of the two is 47.5 Be.$_H$. The specific gravities of the two constitutents are, respectively, 1.000 and 2.900. As their weights are equal, the volumes may be taken, respectively, as 29 and 10. 29 vols. of 1.000 sp. gr. and 10 vols. of 2.900 sp. gr. average

$$1.487\frac{7}{59} \text{ sp. gr.} = \text{exactly } 47.5° \text{ Be.}_H$$

which proves the contention in this simple case. By a laborious calculation, it can be demonstrated perhaps more conclusively. Take a lbs. of l° Be., b lbs. of m° Be., c lbs. of n° Be. First, multiply each number of Baume degrees by the number of lbs.; divide the sum of the products by the sum of the lbs., and the quotient will be the Baume degrees of the mixture. Second, convert the Baume degrees of each component into specific gravity. By the use of the respective specific gravities, convert each number of pounds into

(Continued on Page 106)

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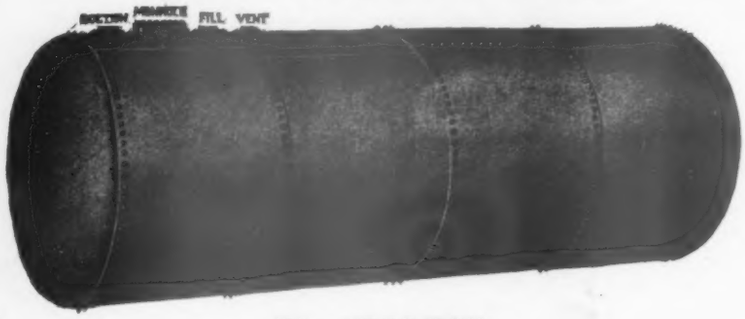

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(Continued from Page 102)

gallons, perform the alligation in the usual way, and convert the resulting specific gravity into Baume degrees, when the result will be seen to be the same as that of the first operation where the Baume degrees were used directly.

From the foregoing it will be seen that while specific gravities and weights per unit of volume are closely related to each other) in the metric system they are practically the same), Baume degrees, light or heavy, are related, altho more remotely, to volumes per unit of weight. This fact and the deduction from it that alligation problems dealing with the weights of the component and resultant liquids can be worked directly with Baume degrees, may be well known, but the writer has never heard or seen them referred to orally or in print.

5—Frequently a would-be purist in nomenclature, who approaches the oil business from a scientific viewpoint, condemns the oil man for using the expression "Baume gravity," and tries to persuade him to say "Baume specific gravity," which is more cumbersome and further from being correct. If time in speaking and time and space in writing were of no importance, we might be absolutely precise and say, for instance, in using the light Baume scale: "The oil is of a specific gravity equivalent to 50 degrees Baume." However, this is entirely unnecessary, and the expression, "The oil is 50 Baume gravity," cannot be misunderstood and is entirely justifiable. In speaking of the "degrees gravity" of an oil, the refiner follows the practice of the brewer who speaks of the "degrees of of gravity in a wort," but happily for the brewer his gravity degrees are much more easily converted into specific gravities than those of the refiner.

One meaning of the word gravity is "weight." Some refiners speak of "weighing" an oil, where most, meaning the same thing, call it "taking the gravity." The word gravity has done duty since the early days for both specific gravities and for Baume degrees, and its use in this way is convenient. When the figures are attached there is little chance of misunderstanding which one is meant; but in case of oil, the common expressions "higher gravity" and "lower gravity" have directly opposite meanings, depending upon whether the specific gravity or ht Baume gravity is referred to.

A reprehensible expression often used in oil contracts is "The oil shall be (say) 30 degrees gravity or better." The meaning of the word "better" is obscure, as it depends on the opinion of the customer or a knowledge of the use to which the oil is to be put, to decide whether it would be better if it were heavier, or better if it were lighter.

To return to the subject in the beginning of this subhead, it is probable that if our theoretic friends wish to do away with the use in the oil business of the convenient and time-honored word "gravity" as applied both to specific gravities and Baume degrees, and the convenient and time-honored combination "Baume gravity" as applied to the latter, they will have to first kill off all the old-timers and then at least the second and third generations.

Analysis Of Exports For Year Ending June 30; Seven Year Comparison

By Special Correspondent
NEW YORK, Aug. 2

THE country's exports of petroleum products for June shows a decline of 14,541,913 gallons ($2,743,123), as compared with the May returns, 249,745,719 against 264,287,632 gallons ($46,400,765, against $49,143,888), but surpass the June, 1919, record by 3,770,949 gallons ($12,940,849).

The greatest loss on the comparison of June and May exports is in the lubricants, with other napthas, fuel and gas and crude oil contributing. Kerosene, gasoline and residuum recorded gains.

The June export statistics complete a fiscal year during which the foreign trade was maintained on a scale that establishes a new high record. The most striking gain over the former fiscal year is shown in value, 23.84 per cent, as against a volume growth of 11.70 per cent. Gasoline and fuel oil and gas oil were the only products which failed to better their former records, but the margin would probably have been decidedly in their favor if the available supplies had measured up to foreign requirements. Kerosene made rapid strides toward the recovery of its pre-war prestige. The notable increases in crude oil and residuum are attributed largely to the need of European nations for fuel.

On the comparison of the last fiscal year's foreign trade with that of the pre-war period, the twelve months ending June, 1914, the total value gain is again found far in excess of the volume expansion, more than 180 per cent, against about 24 per cent.

So far as the various items are concerned, kerosene and residuum are the only ones which stand to disadvantage in volume, but all hold a liberal lead in value.

Comparative monthly exports and totals for June, 1920, May, 1920, and June, 1919, follow:

	Gallons	Value
Kerosene		
June, 1920	62,014,154	$10,554,305
May, 1920	56,458,213	9,723,441
June, 1919	122,419,897	14,358,693
Gasoline		
June, 1920	33,873,368	$8,803,698
May, 1920	31,806,308	8,538,413
June, 1919	20,850,759	5,271,686
Other Napthas		
June, 1920	34,629,791	$9,703,508
May, 1920	37,151,358	9,858,838
June, 1919	10,851,479	2,392,969
Lubricating Oil		
June, 1920	27,425,970	$10,219,332
May, 1920	41,569,932	14,083,542
June, 1919	25,074,829	7,705,953
Fuel and Gas Oil		
June, 1920	67,804,727	$4,653,304
May, 1920	69,757,132	4,433,145
June, 1919	56,021,668	3,148,090
Crude Oil		
June, 1920	23,980,828	$2,461,545
May, 1920	27,539,689	2,506,241
June, 1919	10,687,741	577,192
Residuum		
June, 1920	16,881	$5,073
May, 1920	5,000	268
June, 1919	68,397	5,333
Totals		
June, 1920	249,745,719	$46,400,765
May, 1920	264,287,632	49,143,888
June, 1919	245,974,770	33,459,916

Details of June, 1920, exports by principal countries follow in gallons:

Kerosene—England, 16,085,756; China, 8,715,565; France, 4,878,236; Netherlands, 3,631,524; Norway, 3,111,273; Hongkong, 2,984,359; Belgium, 2,400,314; British India, 2,202,712; Japan, 2,029,720.

Gasoline—France, 8,031,953; Canada, 6,345,340; England, 3,813,078; Philippine Islands, 2,543,987; Japan, 2,446,776; Sweden, 2,303,582; Mexico, 2,121,151.

Other napthas—England, 10,476,016; France, 6,817,130; Netherlands, 3,100,000; Italy, 2,000,000; Spain, 1,600,000; Canada, 1,450,254; Denmark, 1,295,957.

Lubricating oil—England, 5,766,520; France, 5,297,973; Italy, 2,408,746; Germany, 1,822,727; China, 1,268,457; Belgium, 1,135,598.

Fuel and gas oil—Canada, 15,456,706; England, 14,256,542; Chile, 5,681,500; Netherlands, 6,928,799; Panama, 5,027,106; Philippine Islands, 4,434,698; Italy, 4,106,106; France, 1,785,409; Germany, 1,312,270.

Crude oil—Canada, 17,939,911; Germany, 1,020,660; Italy, 593,237.

Residuum—England, 16,180.

A table showing comparative total exports for the last seven fiscal years is shown below. This table shows the changes in the character of the foreign trade from the pre-war period, 1914, thru the war and during the reconstruction era.

Comparative Exports

	1920	1919	1918	1917	1916	1915	1914
Kerosene, gallons	916,395,480	722,129,836	528,217,669	833,969,012	823,164,882	886,316,740	1,137,283,310
Value	$126,352,969	$80,964,925	$47,261,782	$54,642,377	$52,288,788	$53,607,082	$74,500,162
Gasoline, gallons	294,939,121	322,882,665	260,880,122	226,154,560	100,148,554	156,860,666	151,611,537
Value	$72,430,278	$78,079,792	$61,642,859	$46,932,967	$16,297,561	$17,603,317	$21,699,475
Other Napthas, gallons	185,265,961	145,301,908	209,029,477	199,563,352	194,644,803	94,335,128	40,840,730
Value	$50,688,333	$38,654,514	$52,739,227	$41,057,840	$29,472,233	$10,296,928	$5,653,210
Lubricating Oil, gallons	339,701,134	274,780,451	269,673,770	271,032,751	250,392,768	214,429,099	196,884,696
Value	$112,064,678	$86,311,726	$66,162,117	$48,665,984	$37,451,607	$28,499,786	$27,852,559
Fuel and Gas Oil, gallons	688,637,009	902,202,305	1,223,283,641	1,039,323,708	897,853,433	672,931,878	475,143,205
Value	$38,618,399	$50,682,105	$61,137,607	$32,329,617	$24,770,296	$18,543,976	$13,747,863
Crude Oil, gallons	354,357,795	163,782,498	185,069,674	177,748,832	163,734,200	152,514,129	146,477,342
Value	$23,899,071	$9,905,490	$9,288,979	$7,309,990	$5,754,279	$4,911,634	$6,812,672
Residuum, gallons	48,307,981	181,121	881,875	536,270	13,539,443	9,952,970	113,370,245
Value	$2,727,603	$14,557	$96,480	$30,165	$388,466	$230,552	$1,907,715
Totals, gallons	2,827,604,481	2,531,260,784	2,677,036,228	2,748,328,485	2,443,478,083	2,187,340,610	2,281,611,065
Value	$426,781,331	$344,613,109	$298,329,051	$230,968,940	$166,423,230	$133,693,275	$152,174,056

Average prices for the different products for the seven fiscal years ending with June 30, have been as follows in cents per gallon:

	Kerosene	Gasoline	Other Napthas	Lubricating Oil	Fuel and Gas Oil	Crude Oil	Residuum	Total
1920	13.80	24.56	27.36	33.00	5.61	6.74	5.65	15.09
1919	11.21	24.18	26.60	31.40	5.62	6.05	8.04	13.61
1918	8.90	23.63	25.23	24.54	4.92	5.02	10.94	11.10
1917	6.55	20.76	20.57	17.95	3.11	4.11	5.62	8.40
1916	6.35	16.27	15.14	14.96	2.76	3.45	2.90	6.81
1915	6.05	11.22	10.91	13.30	2.75	3.22	2.32	6.11
1914	6.43	14.31	13.82	14.15	2.90	4.65	1.68	6.67

The variance in trade relations with our former allies in the war, England, Canada, France and Italy, is indicated in the following summary:

	1920	1919	1918	1917	1916	1915	1914
Kerosene, gallons	270,867,134	274,337,409	309,643,635	303,793,164	278,590,146	246,213,041	307,237,788
Value	$32,863,400	$25,941,631	$22,766,293	$16,822,224	$14,774,246	$13,185,255	$16,831,232
Gasoline, gallons	205,605,406	255,967,122	212,339,368	173,028,004	61,264,414	113,020,566	81,662,781
Value	$44,325,532	$58,635,799	$48,742,902	$34,801,390	$9,636,556	$11,046,195	$10,046,868
Other Napthas, gallons	84,058,825	106,803,039	175,259,443	160,288,969	141,160,933	74,937,215	23,431,078
Value	$20,540,056	$27,253,166	$43,306,617	$32,441,411	$20,209,410	$7,591,127	$2,873,224
Lubricating Oil, gallons	173,157,271	162,540,490	199,404,188	194,684,309	163,893,207	128,073,513	96,538,685
Value	$57,104,103	$50,570,025	$48,028,086	$33,022,433	$22,708,839	$15,372,897	$11,070,423
Fuel and Gas Oil, gallons	402,227,607	539,239,995	1,107,613,077	787,454,782	674,302,531	507,351,875	309,973,094
Value	$23,100,294	$41,928,706	$56,279,781	$25,657,557	$19,790,287	$14,540,898	$7,483,651
Crude Oil, gallons	308,578,844	143,446,022	163,886,970	141,677,936	122,053,212	105,447,358	88,931,332
Value	$17,124,420	$7,587,782	$7,403,963	$4,589,727	$3,652,738	$2,567,065	$3,857,206
Totals, gallons	1,444,495,087	1,482,334,077	2,168,146,681	1,760,927,164	1,441,264,443	1,175,043,568	907,774,758
Value	$195,057,805	$211,917,109	$226,527,642	$147,334,742	$90,772,076	$64,273,437	$52,162,604

Total Shipments

Shipments to the former allies during the last fiscal year comprised 51 per cent in volume and 76 per cent in value of the total. Their requirements during the twelve months ending June, 1914, were about 40 per cent in volume and 34 per cent in value.

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Neutral Oils
Cylinder Stocks
Petrolatums
Fuel Oil, Etc.

from

Pennsylvania Crude

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Foreign Opportunities

The following information as to inquiries for American products is taken from the Commerce Reports gotten out daily by the bureau of foreign and domestic commerce of the United States Department of Commerce. Reserved information may be obtained by addressing the bureau at Washington, giving the number of the opportunity about which further details are desired.

33268—A wholesale firm in ALBANIA desires to purchase GASOLINE in large quantities. Quotations should be given c. i. f. Saloniki. Correspondence may be in English.

33252—An agency is desired by a merchant in ITALY for the sale of MINERAL OILS. Quotations should be given c. i. f. Genoa. Correspondence may be in English. References.

33263—A merchant firm in SPAIN desires to purchase and secure an agency for the sale of OILS, and WAXES. Correspondence may be in English. References.

33397—The purchasing agent in the United States of a firm in PORTUGAL desires to secure an agency for the sale in that country of cheap LUBRICATING OIL. Payment to be in cash against documents in New York. References.

33402—The American representative of a firm in BRAZIL is about to go to that country and desires to secure an agency for the sale of HEAVY CHEMICALS, turpentine, and rosin. References.

33254—A commercial agent in BULGARIA desires to secure an agency for the sale of WAX and OILS. Quotations should be given c. i. f. port of Varna. Correspondence should be in French. References.

33370—Buying agents in London of a firm in AUSTRALIA desire to purchase or secure an agency for the sale of HEAVY CHEMICALS. Quotations should be given f. o. b. San Francisco or New York. Reference.

33312—An American exporting company having connections with importare in the Scandinavian countries desires to be placed in communication with manufacturers of CHEMICALS, with a view to purchasing and securing agencies. Reference.

33275 — A commercial agent in CHILE desires to secure an agency for the sale of prime matters for soap and candle making, and tanneries, such as PARAFFIN WAX caustic soda, silicate of soda, bichromate of potash, and SULPHURIC ACID. Quotations should be given c. i. f. Talcahuano. Correspondence may be in English. Reference.

33244—Sealed tenders will be received at the office of the power commissioners of a city in CANADA for FUEL OIL ENGINES and generators with switching equipment for an electric plant in a town of that Province. Specifications were received and may be examined at the Bureau or its district offices. (Refer to file No. 11422.)

33245—An agency is desired by a merchant in FRANCE for the sale of CHEMICAL PRODUCTS. References.

PENNSYLVANIA

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Tid oute, Pa.

SUPERIOR OIL WORKS

MUTUAL REFINING CO.

WARREN, PA.

Refiners of

Pure Pennsylvania Petroleum

REFINERY-TANK WAGON MARKETS

Gasoline Demand Is Falling Off As Money Stringency Is Increasingly Felt

SLACKENING off in the demand for gasoline which was general over the country, was the chief feature in the marketing situation during the past week. The only increase in the tank wagon price of gasoline was one by the Standard Oil Company of Louisiana, which marked up gasoline 1 cent a gallon thruout the state of Louisiana, doubtless to bring this state into line with other states in its marketing territory. This increase took effect August 4.

Heavy movement of gasoline from the north Texas refining district to the Pacific Coast on purchases by the Union Oil Company and the Standard of California to relieve the shortage in the California product has considerably reduced the available supply in that territory, but the slackening of the demand is such that no shortage is developing.

Demand Slackening in Oklahoma Territory

The easing off in the demand for motor fuel is most apparent in the refining territory of which Tulsa is the center. One of the factors in this easing off is believed by the students of the market to be that the jobbers to a considerable extent are stocked with blended products that they bought earlier in the season when indications were that an acute gasoline shortage might develop. Cool and wet weather over the country, which restricts motoring somewhat, is another contributing factor.

The underlying cause for the entire motor fuel situation, however, is believed to be the fact that the restrictions on credit instituted by the Federal Reserve board and the general tightening up of money is beginning to make its influence increasingly felt in most parts of the country. This is particularly true in the middle west, especially in those states making up Standard of Indiana territory. Prior to two weeks ago those restrictions had practically not been felt at all in that section of the country.

Automobiles Stand Untaken On Board Cars

According to reports, the money situation has become so acute insofar as the automobile business is concerned that in some places shipments of cars with sight draft attached to the bill of lading are lying in boxcars in railroad yards because the dealers to whom they are consigned do not find themselves in position to take up the sight drafts. This condition is making itself directly felt in easing up of the demand for gasoline.

Export conditions are still very bad and this is reflected in easier prices for cylinder stocks and kerosene. Kerosene shows a steady weakening in all refining centers except western Pennsylvania, altho the refiners generally are making a gas and fuel oil cut which considerably reduces the output of this product and prevents the stocks for the most part from growing to such size as to force suspension of plants.

Run More Fuel Oil, Cut Kerosene Output

Staff Special

TULSA, Aug. 1.—Lack of demand for gasoline is attributed to a number of factors at this time, the principal one being the large storage of jobbers who have undertaken to market a blended product. This, coupled with rather poor tank car movement and a lack of export orders, is believed to be the reason for temporary softening of gasoline.

While 60-61 straight-run gasoline is moving freely to export terminals there is but little new navy specification being offered and sold. This is due to a large extent to the accumulation of stocks by the smaller Independent plants of the Mid-Continent and a disposition to hesitate on quotations of motor fuel for future delivery. A factor that is believed to have an adverse effect upon the market situation is the restriction of credits principally to small plants, which is practically sure to curtail their output.

Plant managers of Mid-Continent refineries are cutting gas and fuel oil to an ever-increasing extent, practically eliminating kerosene, as this product is showing a weakening seasonable demand.

Neutral oils and cylinder stocks are practically at a standstill as to price, with only an ordinary demand, the only requirement being that these products be uniform. The impending shortage of coal is probably saving a number of marketers in the Mid-Continent from being wiped out. These marketers ordinarily "bears," have consistently, for the past six months, played futures with a distinctly bullish outlook.

Had not the present shortage of coal been brought about, it is a foregone conclusion that this type of marketing organization would have been entirely wiped out. As it is, there is a number of them in difficulties.

Gasoline, Cylinder Stocks Are Weaker

Staff Special

PITTSBURGH, Aug. 2.—Refiners in western Pennsylvania district report the same situation in regard to gasoline that has prevailed in the other refining centers of the country. That is, the keen demand for gasoline is falling off to some extent. Most grades of gasoline at the end of the week showed a decline of around a quarter of a cent a gallon from the prices ruling the previous week.

This condition is attributed by refiners

to the fact of conservative tendencies beginning to be more and more felt all over the country and to the fact that export shipments are almost at a standstill, the congestion on the New York docks causing the railroads to place embargoes against shipment of more stuff to the seaboard to add to the jam already piled up there.

The failure of export shipments to move is also blamed for the continued decline in the cylinder stocks. The 600 steam refined product during the week, and most of the other grades, fell off in the neighborhood of two cents a gallon at the Pennsylvania plants. The seaboard storage is full of cylinder stocks piled up because of the developed reluctance of foreign buyers to give shipping instructions and the exporting companies and the brokers who buy for them are entirely out of the market as they have been for the past two or three weeks. The same is true of wax, which weakened considerably over the week.

Kerosene in the east, in contrast to the situation at the other refining centers, is holding up well, probably because of a tendency of the refiners to keep the stocks from becoming overlarge by runnting their kerosene to a considerable extent into their gas and fuel oil. These products are moving on strong demand, altho the ruling price at which fuel oil is moving from the plants is reported as about a quarter of a cent off from the price ruling a week ago, the prevailing price today bereported as 12¼ cents.

The neutrals are stationary at the prices ruling a week and are moving freely.

Fuel Oil Is Short In Texas Markets

Staff Special

HOUSTON, July 31.—Altho gasoline prices in north Texas are holding to previously existing levels and there is comparatively less on hand than elsewhere in the Mid-Continent as a result of purchases by Pacific coast distributors, a factor that cannot be entirely overlooked in the future, has to do with curtailed credits by financial institutions resulting in reports of automobiles all over the country standing on cars in the railroad yards with bills of lading attached and not being taken up because of the unwillingness of banks to carry the paper.

This phase of the gasoline distributing situation is considered in some quarters to be at least one of the reasons why gasoline prices failed to reach the predicted 35 cents a gallon tank wagon price by August 1. If not this, then these same students of the situation figure that some other economic reason about which they are not generally informed is a factor, or a combination of several such conditions.

While fuel oil has been selling f. o. b refinery in north Texas around $3.25 a barrel strength in the market was shown the first of the week, and at the end of the week. South Texas quotations had been made for Atlantic seaboard delivery in sellers' cars, immediate shipment, at as high as $4.25 a

Refinery Markets, All Products

Pennsylvania, Oklahoma, North and South Texas

FOLLOWING are the average market prices on the more important petroleum products in cents per gallon f. o. b. refinery in Oklahoma, Texas and Pennsylvania. These are actual prices at which the bulk of each product is moving from the refineries at the present time. Anyone having knowledge of different prices which have obtained on any considerable quantity of any of the products mentioned will greatly favor us by advising us at once.

Prices effective Aug. 2.

GASOLINE AND NAPTHAS

Pennsylvania	Prices, Aug. 2
54 Naptha	25½
56 Naptha	26
58 Naptha	26½
60 Straight-run gasoline	27½
62 Straight-run gasoline	27½
64 Straight-run gasoline	28½
68 Straight-run gasoline	29½
58-60 Blend, 460 end point	26½
60-62 Blend, 450 end point	26½
62-64 Blend, 450 end point	26½
66-68 Blend, 440 end point	26½
60-70 Blend, 440 end point	26½
68-70 Blend, 420 end point	26½

Oklahoma	
50-52, 450 end point	21½-22
56-58, 450 end point	22½-23
58-60, 430-440 end point	23 -23½
60-62, 400 end point	24½-25
62-64, 375 end point	25 -25½
64-66, 365 end point	26 -26½
58-60, 140 I. b. p.-428 e. p	23½-24
80-84 Raw Casinghead	20 -20½
68-70 Blend, 430-435 end point	22 -22½
66-68 Blend, 450 end point	22 -22½
60-62 Blend, 450 end point	22 -22½
58-60 Blend, 440-450 end point	22 -22½
74-76 Absorption Gasoline	21½-22½
60-62 Kerosene Blend	15½-16

BURNING OILS

Pennsylvania	
45 Water White	14
46 Water White	14½
47 Water White	15½
300 Burning Oil	15½

Oklahoma	
42-43	10½-11
44-46	16 -17
42-43 Distillate	10¼-10½

NEUTRAL OILS

Pennsylvania	
200 Vis. No. 3 Assoc. Filt	35
180 Vis. No. 3 Assoc. Filt	33
150 Vis. No. 3 Assoc. Filt	29

Oklahoma (Vis. test 70)	Prices, Aug. 2
100 Vis. No. 2 Color	17 -18
200 Vis. No. 3 Color	27 -28
160 Vis. No. 4 Color	24 -25
200 Vis. No. 4 Color	26½-26½
200 Vis. No. 5 Color	25½-26

South Texas (Vis. test 100; cold test 0)	
70 Vis. No. 2 Color Unfilt. Pale	17½-21½
100 Vis. No. 2 Color Unfilt. Pale	18½-22½
150 Vis. No. 2½ Color Unfilt. Pale	22½-24
200 Vis. No. 3 Color Unfilt. Pale	28½-31½
300 Vis. No. 3 Color Unfilt. Pale	33½-35½
500 Vis. No. 3½ Color Unfilt. Pale	41½-43
750 Vis. No. 4 Color Unfilt. Pale	51 -53½
70 Vis. No. 1½ Color Filt. Pale	22½
100 Vis. No. 1½ Color Filt. Pale	28½
150 Vis. No. 1½ Color Filt. Pale	32½
200 Vis. No. 2 Color Filt. Pale	37½
300 Vis. No. 2 Color Filt. Pale	42
500 Vis. No. 2½ Color Filt. Pale	48½
750 Vis. No. 2½ Color Filt. Pale	57½
200 Vis. No. 5½ Color Red Oil	29½-30½
300 Vis. No. 5½ Color Red Oil	31½-33
500 Vis. No. 6 Color Red Oil	36½-38½

CYLINDER STOCKS

Pennsylvania	
600 Steam Refined	44
650 Steam Refined	58½
635 Steam Refined	49
600 Flash	64
600 Amber Filtered	58½
600 Medium Filtered (D)	70
Cold Test Stocks (bright filtered)	92
Cold Test Stocks (dark filtered)	88

WAX

Pennsylvania	
122-124 White Crude Scale Wax, N. Y.. lb.	8¼
124-126 White Crude Scale Wax, N. Y., lb.	9

Oklahoma	
122-124 White Crude Scale Wax	8-8½

FUEL OIL

Pennsylvania	
36-40 Fuel Oil	12¼

Oklahoma	
32-36 Gas Oil (gal.)	8¼- 8¼
24-26 Fuel Oil (bbl.)	$3.15-$3.30
Fuel Oil, buyers' cars (bbl.)	$2.70-$2.80

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DALLAS OFFICE
Boger Bldg.
Telephone X-580 and L.D. 380

KANSAS CITY OFFICE
Security Bldg.
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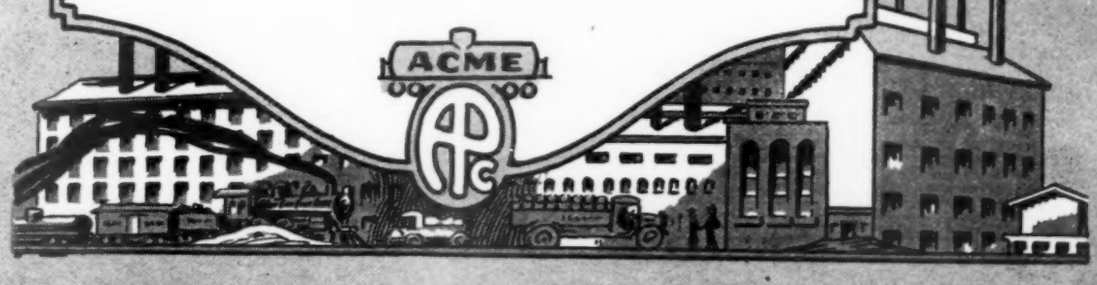
Home—Main 8400



barrel, altho there is no record of sales at that price.

Furnaces are reported down at East Chicago, Gary and Hammond for lack of coal and the transportation situation as it affects coal is a factor in the predicted higher prices for fuel oil on which it is possible to get a better railroad movement.

Unrest of this character added to the usual fall and winter demand for fuel oil generally is regarded as making for higher fuel prices this winter, with possible important advances in the meantime, particularly with a situation prevailing under which Mexican fuel does not promise relief. When bids were opened early in the week for supplying Texas institutions with fuel oil the Humble Oil & Refining Company was the only bidder and this bid was at a price only about 50 cents a barrel lower than the then prevailing spot quotation, indicating the scarcity of fuel oil to be obtained in southwest in quantity or under contract.

Oklahoma fuel is evidently not to be had in sufficient quantities to supply the demand indicated in inquiries being made in Texas for this product by principal refinery interests, some of which also maintain marketing organizations.

In the south Texas lub market, red oils are reported showing strength day by day, and altho some of the pales have not always moved as rapidly as expected, there have been cases where the quality of the product was at fault. Generally speaking, lubricants continue in good demand and there is only slight change from the previously existing situation.

Gasoline Is Advanced One Cent In Louisiana

Effective August 4 the Standard Oil Company of Louisiana advanced the price of gasoline, all modes of delivery, one cent a gallon in the state of Louisiana only. The price of kerosene was not affected.

Due to a correction made in gasoline prices in Standard of Louisiana territory in this issue, this change of August 4 apparently stands as a reduction of one cent, rather than an advance. This publication was carrying as the tank wagon market which is actually the open market service station quotation for gasoline. Two cents should have been deducted from this price to arrive at the tank wagon price to reselling agents. Making this correction in this issue and advancing the price one cent in the state of Louisiana gives the present price, which is one cent less than prices previously carried in Louisiana and two cents lower at other states in this company's territory.

TULSA, Aug. 1.—The Charles F. Noble Oil & Gas Company has announced the closing of a contract with the Carson Petroleum Company, of Chicago, whereby the latter will market all of the output of Noble plants until July 21, 1921. The transaction involves the marketing of about 50,000 gallons casinghead gasoline daily in addition to output of refineries at Quay, Okla., and Burkburnett, Texas.

Tank Wagon, Service Station Markets

Gasoline and Kerosene

BELOW are given in cents a gallon, service station and tank wagon quotations on gasoline and tank wagon quotations for kerosene as quoted by the Standard Oil Companies, the points at which prices are given being arranged by Standard Oil marketing districts.

	Gasoline		Oil
	Tank Wagon	Service Station	Tank Wagon
	Aug. 2	Aug. 2	Aug. 2
S. O. NEW JERSEY DISTRICT			
Atlantic City, N. J.	28.5	30.5	17.5
Newark, N. J.	28.5	30.5	17.5
Annapolis, Md.	29.5	31.5	18
Baltimore, Md.	28.5	30.5	17
Washington, D. C.	28.5	30.5	17.5
Danville, Va.	30	32	18.5
Norfolk, Va.	29	31	17.5
Petersburg, Va.	29.5	31.5	18
Richmond, Va.	29	31	17.5
Roanoke, Va.	30.5	32.5	19
Charleston, W. Va.	29.5	31.5	18
Keyser, W. Va.	30	32	18.5
Parkersburg, W. Va.	28.5	30.5	17
Wheeling, W Va.	29.5	31.5	18
Charlotte, N. C.	30	32.5	19.5
Hickory, N. C.	30.5	32.5	20
Mt. Airy, N. C.	30.5	32.5	20
Salisbury, N. C.	30.5	32.5	20
Charleston, S. C.	29.5	31.5	18
Columbia, S. C.	31	33	19.5
S. O. NEW YORK DISTRICT			
New York, N. Y.	30	32	18
Albany, N. Y.	31	33	19
Buffalo, N. Y.	30	32	18.5
Syracuse, N. Y.	31	33	19
Boston, Mass.	31	33	19
Burlington, Vt.	31	33	19
Bridgeport, Conn.	31	33	19
Hartford, Conn.	31	33	19
New London, Conn.	31	33	19
Providence, R. I.	31	33	19
Augusta, Me.	31	33	19
Portland, Me.	31	33	19

NOTE—The Atlantic Refining Company which markets in part of New England territory advanced its prices one cent a gallon on gasoline May 12 to 30.6 cents tank wagon and 34 cents service station at the following points: Providence, Hartford, New Haven, Worcester and Springfield.

ATLANTIC REFINING DISTRICT			
Pittsburgh, Pa.	29.7	33	20
Philadelphia, Pa.	29.7	33	20
Dover, Del.	29.7	33	20
Wilmington, Del.	29.7	33	20
S. O. OHIO DISTRICT			
Cleveland, Ohio	29	30	20

NOTE: Tank Wagon markets at all points in Ohio are the same as for Cleveland.

S. O. KENTUCKY DISTRICT			
Lexington, Ky.	28	30	20
Louisville, Ky.	28	30	19
Bowling Green, Ky.	29	31	19.5
Jackson, Miss.	28	28	15
Natchez, Miss.	30	30	15.5
Birmingham, Ala.	31.5	31.5	19.5
Mobile, Ala.	28	30	18.5
Atlanta, Ga.	28.5	30.5	20.5
Augusta, Ga.	28.5	30.5	20.5
Savannah, Ga.	28	30	19.5
Fort Myers, Fla.	30.5	32.5	16.5
Tampa, Fla.	28.5	30.5	15.5
S. O. LOUISIANA DISTRICT			
Little Rock, Ark.	29	31	21
New Orleans, La.	27	29	17.5
Shreveport, La.	28	30	18.5
Memphis, Tenn.	28	30	19
Nashville, Tenn.	28.5	30.5	18.5

	Gasoline		Oil
	Tank Wagon	Service Station	Tank Wagon
	Aug. 2	Aug. 2	Aug. 2
MAGNOLIA PETROLEUM DISTRICT			
Muskogee, Okla.	29	31	20
Oklahoma City, Okla.	28	30	18
Tulsa, Okla.	27	29	19
Fort Smith, Ark.	27.5	29.5	20
Texarkana, Ark.	29	31	20
Amarillo, Texas	30	32	21
Dallas, Texas	29	31	20
El Paso, Texas	30	32	21
Fort Worth, Texas	29	31	20
Galveston, Texas	29	31	20
Houston, Texas	29	31	20
S. O. INDIANA DISTRICT			
Chicago, Ill.	26	28	18.5
East St. Louis, Ill.	27.1	28.1	19.3
Peoria, Ill.	27.3	28.3	19.5
Indianapolis, Ind.	27.3	28.3	19.7
Fort Wayne, Ind.	27.1	28.1	19.5
Bay City, Mich.	28.1	29.1	19.8
Detroit, Mich.	28	29	19.8
St. Louis, Mo.	25.7	28	18.7
Kansas City, Kans.	26.2	27.2	17.6
Topeka, Kans.	27	28	18.2
Wichita, Kans.	26.8	27.8	18.2
Des Moines, Ia.	27	28	18.9
Keokuk, Ia.	27.1	28.1	18.9
Sioux City, Ia.	27	28	19
La Crosse, Wis.	27.8	28.8	19.9
Milwaukee	27.3	28.3	19.1
Madison, Wis.	27.8	28.8	19.2
Minneapolis, Minn.	27.2	29.2	20
Pipestone, Minn.	28.2	29.2	19.9
Aberdeen, S. D.	28.9	30	20.4
Sioux Falls, S. D.	28.8	29.8	19.9
Bismarck, N. D.	31.7	32.7	22.4
Fargo, N. D.	30.6	31.6	21.3
Grand Forks, N. D.	30.8	31.8	21.5
Minot, N. D.	32.3	33.3	23
Bartlesville, Okla.	27.1	29.1	18.5
S. O. NEBRASKA DISTRICT			
Crawford, Neb.	29	29	21
Omaha, Neb.	28.5	28.5	19.75
CONTINENTAL OIL DISTRICT			
Denver, Colo.	31	33	23
Glenwood Springs, Colo	34.5	36.5	26
Pueblo, Colo.	31	33	23
Basin, Wyo.	29	29	20.5
Casper, Wyo.	27.5	27.5	19
Cody, Wyo.	30.5	30.5	22
Cheyenne, Wyo.	30.5	32.5	22
Lander, Wyo.	29.5	29.5	21
Billings, Mont.	30.5	31.5	22.5
Butte, Mont.	32	33	24
Great Falls, Mont.	32	33	24
Helena, Mont.	32	33	24
Miles City, Mont.	32	33	24
Ogden, Utah	31	33	22.5
Salt Lake City, Utah.	31.5	33	22.5
Boise, Idaho	32.5	34.5	24
Albuquerque, N. M.	31.5	33.5	24
S. O. CALIFORNIA DISTRICT			
Los Angeles, Cal.	23.5	23.5	16.5
San Francisco, Cal.	23.5	23.5	16.5
Portland, Ore.	25.5	25.5	17.5
Seattle, Wash.	24.5	24.5	17.5
Spokane, Wash.	30.5	30.5	22
Tacoma, Wash.	24.5	24.5	17.5

Crude Production, Consumption and Stocks

As Reported by U. S. Geological Survey

THE column headed Production shows the quantity of oil received from producers by pipe line and other marketing companies and by refineries that receive the crude directly from the well. Figures as to oil consumed on leases and producers' stocks are not included except for California, which include all petroleum brought to the surface

The column headed Delivered to Consumers includes figures on domestic crude petroleum delivered to consumers by pipe lines and other marketing companies.

Stocks include domestic crude held in storage on the last day of the month by pipe lines and other marketing companies. Crude oil delivered to refiners is not included nor is petroleum held in storage by producers on leases. Figures are in barrels of 42 gallons.

Field	Production	Delivered to Consumers	Stocks
APPALACHIAN			
Total, 1919	29,232,000	28,922,000	Jan. 31, 3,882,000
February, 1920	2,087,000	1,976,000	Feb. 29, 3,993,000
March, 1920	2,565,000	2,242,000	Mar. 31, 4,316,000
April, 1920	2,493,000	2,602,000	Apr. 30, 4,146,000
May, 1920	2,488,000	2,513,000	May 31, 4,121,000
LIMA-INDIANA			
Total, 1919	3,444,000	3,442,000	Jan. 31, 1,296,000
February, 1920	214,000	305,000	Feb. 29, 1,205,000
March, 1920	266,000	234,000	Mar. 31, 1,237,000
April, 1920	254,000	269,000	Apr. 30, 1,222,000
May, 1920	270,000	189,000	May 31, 1,303,000
ILLINOIS			
Total, 1919	12,436,000	10,165,000	Jan. 31, 3,862,000
February, 1920	831,000	789,000	Feb. 29, 3,904,000
March, 1920	992,000	978,000	Mar. 31, 3,918,000
April, 1920	884,000	907,000	Apr. 30, 3,896,000
May, 1920	935,000	1,119,000	May 31, 3,711,000
ALL MID-CONTINENT (Okla., Kans., Central and North Texas, North La.)			
Total, 1919	196,891,000	198,901,000	Jan. 31, 77,326,000
February, 1920	19,213,000	18,819,000	Feb. 29, 77,720,000
March, 1920	20,745,000	20,241,000	Mar. 31, 78,188,000
April, 1920	21,103,000	20,734,000	Apr. 30, 78,470,000
May, 1920	21,100,000	25,590,000	May 31, 78,974,000

Oklahoma-Kansas	Production	Central North Texas	Production
February, 1920	11,510,000	February, 1920	5,175,000
March, 1920	12,757,000	March, 1920	5,405,000
April, 1920	12,307,000	April, 1920	5,064,000
May, 1920	12,609,000	May, 1920	5,639,000

North Louisiana	Production
February, 1920	2,201,000
March, 1920	2,546,000
April, 1920	3,732,000
May, 1920	2,852,000

GULF COAST	Production	Delivered to Consumers	Stocks
Total, 1919	20,568,000	17,417,000	Jan. 31, 12,328,000
February, 1920	1,711,000	2,015,000	Feb. 29, 11,934,000
March, 1920	2,020,000	2,464,000	Mar. 31, 11,489,000
April, 1920	2,031,000	2,272,000	Apr. 30, 11,248,000
May, 1920	2,043,000	2,237,000	May 31, 11,054,000
ROCKY MOUNTAIN			
Total, 1919	20,568,000	17,417,000	Jan. 31, *217,000
February, 1920	1,175,000	1,170,000	Feb. 29, 229,000
March, 1920	1,334,000	1,336,000	Mar. 31, 227,000
April, 1920	1,319,000	1,308,000	Apr. 30, 238,000
May, 1920	1,387,000	1,408,000	May 31, 217,000
CALIFORNIA			
Total, 1919	101,564,000	103,016,000	Jan. 31, 28,253,000
February, 1920	7,974,000	8,873,000	Feb. 29, 27,354,000
March, 1920	8,570,000	9,702,000	Mar. 31, 26,222,000
April, 1920	8,265,000	8,715,000	Apr. 30, 25,772,000
May, 1920	8,636,000	9,155,000	May 31, 25,253,000

*The apparent discrepancy in stocks for the Rocky Mountain district is due to the fact that starting with the month of January, 1920, stocks are compiled by the survey to include crude oil held in storage by pipe line and other marketing companies, whereas they formerly included also stocks held by refineries receiving oil directly from the wells. This reduction in Rocky Mountain stocks is only apparent, the balance being held by refineries there.

'Lub' Inquiries Easier In Export Market

By Special Correspondent

NEW YORK, Aug. 2.—Export inquiries have been maintained on the same active scale, but the character of trading shows little material change, and prices are apparently steady on the recently-prevailing basis. Interest in gasoline and the napthas continues the featuring point of the foreign trade, and according to the experience of a leading company, these products are running about 60 per cent against 40 per cent for kerosene. In some quarters the demand for the lubricants has lately shown a slackening tendency.

Details of the country's exports for June and the fiscal year are given in full, with comparisons on another page, and in this connection the returns are summarized as follows:

	Gallons	Value
June, 1920	249,745,719	$ 46,400,765
May, 1920	264,287,632	49,143,888
June, 1919	245,974,770	33,459,916
12 months ending June,		
1920	2,827,604,481	426,781,331
1919	2,531,260,784	344,613,109
1918	2,677,036,228	298,329,051
1917	2,748,328,485	230,968,940
1916	2,443,448,033	166,416,922
1915	2,187,340,610	133,693,275
1914	2,281,611,065	152,174,056

The significant changes in the character of the foreign trade during the above fiscal years are analyzed elsewhere in this issue.

Foreign exchange developments for the week have been marked by a continued recession in sterling, which is attributed chiefly to the war between the Russian Soviet and the Polish government. German marks have yielded slightly under heavy offerings. The course of francs and lire has been fairly steady against the weakness in sterling.

There have been no petroleum charters during the week, and general tonnage operations have continued slack on the difficulty of coal engagements, and rates have reflected an easing tendency.

North Texas Plants Stocked On Kerosene

Staff Special

HOUSTON, Aug. 1.—Altho enough kerosene is moving from north Texas refinery points to allow such plants as are otherwise in position to run, most all the managements report stocks an hand. Very little kerosene is now going to export, and even this small quantity is practically confined to the movement of the Export Oil Corporation thru its Avondale, La., loading station.

Kerosene is selling for a 42-43 gravity treated product in north Texas at 9½ to 10 cents.

Export Oil Corporation loaded out the third week in July from Avondale a part cargo of kerosene on the steamship Saranac, consisting of 750,790 gallons, the vessel having previously obtained a greater part of her cargo at the Baton Rouge refinery of the Standard Oil Company of Louisiana. The steamship Petroleum was loaded with 1,903,000 gallons of kerosene for France, and a cargo of navy fuel on board the steamship War Hindoo, is destined for overseas movement.

The steamship British Major, loaded at Avondale and Westwego by the Union Petroleum Company with 1,889,818 gallons of gasoline, has cleared for London, and the New Orleans Refining Company has loaded out two kerosene shipments, 735,810 gallons on the steamship Unio for Finland, and 2,680,329 gallons on the steamship Melania for France.

Turpentine Reacts; Shows 5 Cent Loss

By Special Correspondent

NEW YORK, Aug. 2.—The local market for turpentine has reacted, in sympathy with the trend at primary quarters, closing at $1.65 from yard, a loss of 5 cents for the week. Savannah has yielded from $1.55 to $1.51.

The local demand has been slow, but the available stocks are of negligible extent, unloading of arriving steamers still being attended with difficulty on account of the shortage of labor at the piers and the heavy congestion of freight awaiting movement.

With the exception of B, all grades of rosin are on a weaker basis by 55 cents for D, 85 cents for F, M, N and WG, 70 cents for G, 80 cents for H and WW, and 90 cents for I and K. Net losses for the week at Savannah are $1 on B, $1.55 on D, $1.35 on EW, $1.75 on N, WG and WW. The spot supply of rosin is short, and while the general demand is conservative, free goods are readily absorbed.

The occasion for the weaker tendency in the south is the abatement of export trading and the progress of the new crop. Rosin oils are nominally steady at unchanged prices in the local trade, but tar is on an easier basis at $14.75 for kiln-burnt and $15.00 for retort, in sympathy with the general trend of the naval stores situation.

The weakness in futures is the outstanding feature of the linseed oil market. November-April shipment has been reported available at $1.05 in tank cars, and $1.10 in barrels, car lots. August-September offers are on a widely-varying basis, $1.30-$1.45 in car lots, but crushers, as a rule, are not keen sellers of this position. The local demand has been narrow, restricted almost entirely to the most urgent needs.

Soya bean oil remains nominally steady on spot at 14½ cents per pound for crude and 15½ cents for deodorized in barrels for jobbing quantities. For shipment from the Pacific coast 10-10½ cents in sellers' tanks is the prevailing basis, but there are reports of shading practices under keen pressure. The crude menhaden oil market is unsettled at primary points and 60 cents is accepted as available at Baltimore and for Gulf shipment. There has been no change in local prices for refined oils.

Offers of sulphuric acid for early delivery continue restricted, the great proportion of the output being engaged on contracts over the balance of the year. In one quarter the following range was quoted for 66 degrees for fairly prompt shipment—tank cars, $24 per ton, f. o. b. works; tank wagons, $29; carboys, car lots, $1.85 per cwt.; less than car lots, $2.00 per cwt.

Producers are not in a position to quote chloride of lime (bleaching powder) for current delivery, and about the only lots obtainable seem to be the odd parcels brokers are able to offer occasionally. The market remains entirely nominal at 7 cents per pound spot and 6 cents from works. A car rolling was reported sold at 6.10 cents in small drums, f. a. s. Caustic soda is well sold ahead, and some producers are said to be falling behind in their contract specifications. It is doubtful whether next year's contract terms will be announced before late fall owing to the uncertainty of labor and fuel conditions.

Tanker Construction Above Other Types

By Special Correspondent

NEW YORK, Aug. 2.—The record of shipbuilding operations for private account as compiled by the Atlantic Coast Shipbuilders' Association to the close of June, with comparisons, shows the following relationship between tankers and other types of freight vessels, in gross tons, the total tanker tonnage for June marking a high record:

1919	Tankers	Freighters	Other Types
October	74,437	235,523	37,383
November	214,940	295,493	40,281
December	369,084	400,556	35,507
1920			
January	476,742	470,197	30,549
February	588,565	620,567	47,441
March	722,549	561,455	53,441
April	745,140	623,917	35,641
May	807,325	619,890	39,409
June	812,325	602,853	38,924

The distribution of the orders now in hand for tankers for various companies is as follows:

	No.	Gross Tons
Standard Oil companies	23	181,410
Atlantic, Gulf & West Indies Co.	10	77,880
Swiftsure Oil Transport Co.	7	56,000
Sinclair Navigation Co.	8	48,800
Union Oil Co.	6	47,800
Pan-American Petroleum Co.	6	36,571
U. S. Mexican Oil Corporation	5	23,750
General Petroleum Co.	3	21,500
Anglo-Mexican Oil Co.	4	21,000
Vacuum Oil Co.	3	19,650
Gulf Refining Co.	3	18,900
Texas Company	2	13,568
Ore Steamship Co.	1	13,500
International Petroleum Co.	1	13,500
W. A. Harriman & Co.	2	12,500
New York Shipbuilding Corp.	2	12,200
Baltimore Dry Dock & S. B. Co.	2	12,000
Lux Navigation Co.	2	10,500
Southern Pacific Co.	1	9,600
Owners not given	1	9,100
French owners	6	8,226
W. R. Grace & Co.	1	7,753
Societe Anonyme d'Armement	1	6,667
Shell Oil Co.	1	5,000
American Sugar Refining Co.	1	4,200
Galena Signal Oil Co.	1	2,500
Tidewater Oil Co.	1	1,200
Byack Shipbuilding Co.	1	950
	119	812,325

Refiners' and Jobbers' Supplies

Following are the average market prices for the week on the principal materials used by refiners and jobbers, f. o. b. shipping point as effective Aug. 2, 1920.

Refiners' Supplies

	July 26	August 2
Soda Ash, light, single bags	$3.00 cwt.	$3.00 cwt.
Silicate of Soda 60 deg.	2.90 cwt.	2.90 cwt.
Sal Soda	1.85 cwt.	1.85 cwt.
Caustic Soda, solid—		
Works	6.00 cwt.	6.00 cwt.
New York	6.50 cwt.	6.40 cwt.
Sulphuric Acid, tank cars, f. o. b. sellers' shipping point	22.00 ton	24.00 ton

Jobbers' Supplies

The following prices represent the open New York market in jobbing quantities, unless otherwise specified:—

English Degras	7c lb.	7c lb.
Domestic Degras	6¾c lb.	6½c lb.
Chloride of Lime	$7.00 cwt.	$7.00 cwt.
Horse Oil	15c lb.	15c lb.
Lard Oil—		
Winter Strained	$1.45 gal.	$1.45 gal.
Extra No. 1	1.25 gal.	1.25 gal.
No. 1	1.20 gal.	1.15 gal.
No. 2 Lard	1.10 gal.	1.05 gal.
Neatsfoot Oil—		
Pure refined	$1.50 gal.	$1.50 gal.
Extra No. 1	1.35 gal.	1.35 gal.
No. 1	1.30 gal.	1.30 gal.
Tallow Oil	1.45 gal.	1.45 gal.
Menhaden Fish Oil		
Light pressed	.95 gal.	.90 gal.
Winter Bleached	1.00 gal.	.93 gal.
Extra winter bleached	1.05 gal.	.96 gal.
Whale Oil		
Extra winter bleached	1.35 gal.	1.35 gal.
Soya Bean Oil	16c lb.	15½c lb.
Linseed Oil, July	1.50 gal.	1.45 gal.
August	1.40 gal.	1.40 gal.
Herring Oil	1.25 gal.	1.25 gal.
Seal Oil	1.75 gal.	1.75 gal.
Rosin B, N. Y.	12.65	12.75
Rosin F, N. Y.	16.35	16 05
**Rosin B	11.50	10 50
**Rosin F	14.35	13.40
Rosin Oil, 1st run	.67 gal.	.70 gal.
Rosin Oil, 2nd run	.75 gal.	.78 gal.
Turpentine, N. Y.	1.70 gal.	1.65 gal.
**Turpentine	1.53½ gal.	1.51 gal.
Pine Tar—		
Kiln Burnt Oil, bbls.	15.25	1475
Retort Oil, bbls.	15.50	15.00

**Savannah Ga. market.

Advances Prices Of Refined In Barrels

By Special Correspondent

NEW YORK, Aug. 2.—To cover the increased cost of containers the Standard, New York, put into effect last Wednesday on advance of 2 cents a gallon in wooden barrels on its refined products as follows:

Gasoline, 38 cents; kerosene, 28 cents; astral oil, 30 cents; fuel oil, 23½ cents; varnoline, 38 cents.

For the return of the barrels there is an allowance of $4, or nearly three times the pre-war basis. The volume of gasoline business in wooden barrels is almost negligible. The regular gasoline schedule is 30 cents to garages and 32 cents to consumers in steel barrels, and the heavy seasonal requirements are being met without much difficulty.

Intimations of an advance in gasoline prices have lost force of late, but August is an especially active month and the tax on supplies may become sufficiently keen to bolster the market before the close of the month.

JOHNSON OILS

SUPERIOR QUALITY PETROLEUM PRODUCTS

THE JOHNSON MARKET LETTER

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JOHNSON OIL REFINING COMPANY

208 SO. LA SALLE STREET, CHICAGO

TULSA PITTSBURG DETROIT

Harvey Crude Oil Company

Producers, Refiners, Transporters of

Petroleum Products

Gasoline Kerosene Naphtha Distillates
Fuel Oil Road Oil Lubricants

General Offices: Waldheim Bldg., Kansas City, Mo.
Operating Office: Richards Bldg., Tulsa, Okla.

Marketing Branches:
11 South La Salle St., Chicago, Ill., Richards Bldg., Tulsa, Okla., Moore Bldg., Ft. Worth, Texas

Refineries: Augusta, Kans. Allen, Okla. Lubricating Plant: Tulsa, Oklahoma
Our Own Production

Crude Oil Quotations From All Fields

Price Changes From September 1, 1919, To Date

EASTERN FIELDS

Pennsylvania

1919—Sept. 2 +25¢—Nov. 7 +25¢—Dec. 22 +25¢—Dec. 31 +25¢
1920—Jan. 26 +25¢—Feb. 5 +25¢—Feb. 17 +25¢—Feb. 27 +15¢—Mar. 1 +15¢—Mar. 2 +15¢

Cabell

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15c
1920—Feb. 28 +25¢—May 11 +25c

Wooster

1919—Sept. 8 +10¢—Nov. 21 +25¢
1920—Jan. 12 +25¢—Mar. 1 +10¢—Mar. 10 +25¢

Corning

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Mar. 10 +15¢—Mar. 19 +10¢—Mar. 30 +25¢—May 15 +25¢

North Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

South Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Indiana

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Princeton

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Somerset

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Feb. 27 +15¢—Mar. 10 +25¢—May 10 +25¢

Ragland

1919—Nov. 7 +10¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—May 10 +35¢—July 20 +25¢

Illinois

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Plymouth

1919—Nov. 21 +20¢—Dec. 22 +25¢
1920—Mar. 1 +20¢—Mar. 3 +25c

MID-CONTINENT

Okla.-Kans.

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Healdton

1919—Feb. 21, reduced 25¢—Nov. 21 +15¢—Dec. 19, +65¢—Dec. 22 +25¢
1920—Jan. 8 +25¢—Feb. 27 +25¢—Mar. 3 +25¢

Hewitt

1919—Dec. 2 +40¢—Dec. 22 +25¢
1920—Feb. 27 +25¢—Mar. 1 +25¢

TEXAS FIELDS

Burkburnett

1919—Oct. 1, reduced 25¢—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Electra

1919—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Light

1919—Nov. 21 +25¢—Dec. 18 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Heavy

1919—Feb. 21, reduced 25¢—Nov. 21 +10¢—Dec. 23 +15¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +20¢

Strawn

1919—Nov. 21 +25¢—Dec. 23 +25¢—
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Moran

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Ranger

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

GULF COAST

Spindletop

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 20¢—Mar. 19, reduced 30¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Goose Creek

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Sour Lake

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Humble

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

Batson

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Saratoga

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Dayton

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

West Columbia

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19—May 1, reduced 25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

LOUISIANA FIELDS

Homer

1919—June 7 +10¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢

Bull Bayou

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (above 38°

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

De Soto (above 38°)

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (35° to 37.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (32° to 34.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo Heavy

1919—Jan. 14, reduced 30¢—Feb. 4, reduced 25¢—Mar. 21, reduced 25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 15 +25¢—May 3 +25¢—May 10 +25¢

Crichton

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Jan. 6 +25¢—Mar. 15 +25¢

Pine Island

1919—Feb. 27 +25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—May 3 +25¢—May 10 +25¢

WYOMING

Elk Basin

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25c

Grass Cree

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Big Muddy

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Salt Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

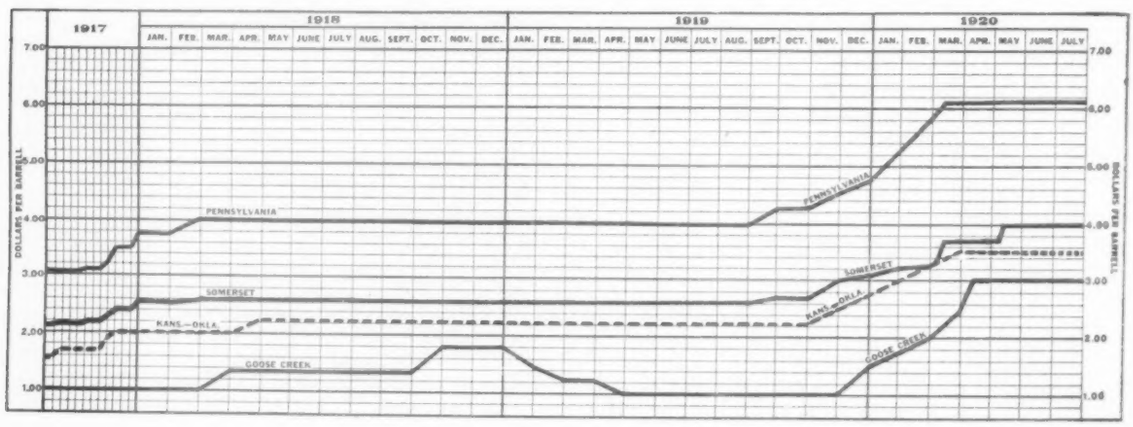
Lance Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13, 25¢—Mar. 16, 25¢

Rock Creek

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Feb. 4 +10¢—Mar. 2 +15¢—Mar. 16 +25¢

Price Trend of Principal Crudes Through July, 1920



Crude Oil Prices

EASTERN FIELDS

	Aug. 4 1920	Jan. 1 1920	Jan. 1 1919
Pennsylvania	$6.10	$5.00	$4.00
Cabell	4.17	3.27	2.77
Wooster, O.	4.05	3.35	2.58
Corning	4.25	3.35	2.85
North Lima	$3.73	$3.13	$2.38
South Lima	3.73	3.13	2.38
Lodi	4.00	3.13	2.38
Indiana	3.63	3.03	2.28
Princeton	3.77	3.17	2.42
Somerset	4.00	3.40	2.60
Ragland	2.35	1.70	1.25
Illinois	3.77	3.17	2.42
Plymouth	3.48	2.98	2.33
Canadian Petrolia	4.13	2.78	2.78

MID-CONTINENT

Kans.-Okla.	$3.50	$2.75	$2.25
Healdton	2.75	2.00	....
Hewitt	3.50	2.75	....

TEXAS FIELDS

North Texas

Burkburnett	$3.50	$2.75	$2.25
Electra	3.50	2.75	2.25
Corsicana light	3.50	2.75	2.25
Corsicana heavy	1.75	1.05	1.30
Strawn	3.50	2.75	2.25
Moran	3.50	2.75	2.25
Ranger	3.50	2.75	2.25

Gulf Coast

Spindletop	$3.00	$1.50	$1.80
Goose Creek	3.00	1.50	1.80
Sour Lake	3.00	1.50	1.80
Humble	3.00	1.50	1.80
Batson	3.00	1.50	1.80
Saratoga	3.00	1.50	1.80
Dayton	3.00	1.50	1.80
West Columbia	3.00	1.25	1.00

LOUISIANA FIELDS

Homer	$3.25	$2.50	....
Bull Bayou	3.15	2.40	....
Caddo, above 38°	3.50	2.75	$2.25
De Soto, above 38°	3.40	2.65	2.15
Caddo, 35° to 37.9	3.40	2.65	2.15
Caddo, 32° to 34.9	3.35	2.60	2.10
Caddo, heavy	2.50	1.25	1.55
Crichton	3.00	2.25	1.75

WYOMING

Elk Basin	$3.10	$2.10	$1.85
Grass Creek	3.10	2.10	1.85
Big Muddy	2.75	1.75	1.50
Salt Creek	2.75	1.75	1.50
Lance Creek	3.05	....	....
Rock Creek	2.75	....	....
Wyoming Black	1.75	....	....

CALIFORNIA

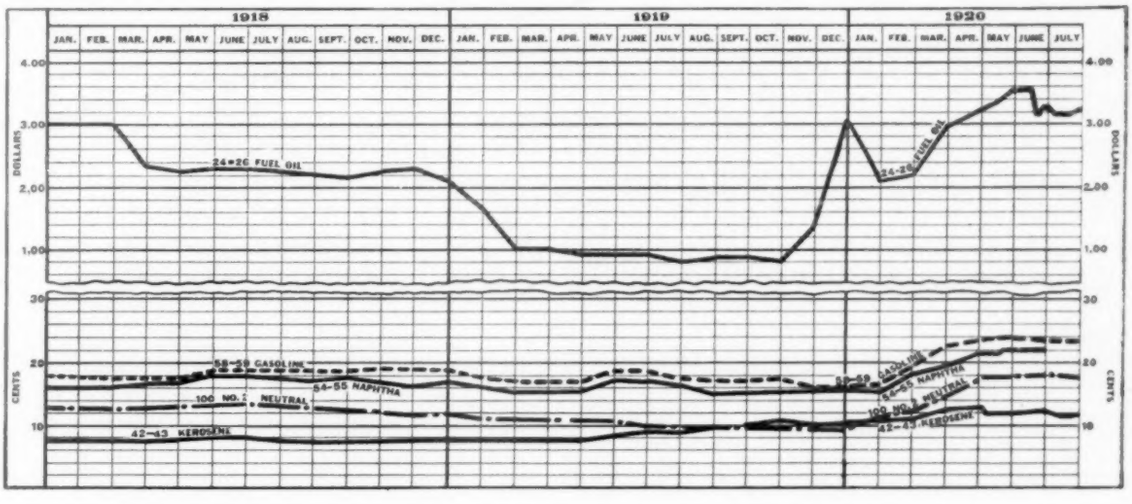
Effective January 30, the Standard Oil Company offered a new price schedule for crude at the well, the new schedule varying widely from the old one in effect since June 10, 1919, and advancing prices for higher gravity crudes very materially over the old figures, and to new record high levels for the California fields.

Effective March 17 the Standard of California advanced all grades in oil fields 25 cents a barrel over prices announced Jan. 31. Effective July 10 the Standard advanced all grades in all fields 12 cents a barrel. Prices July 12 are as follows:

SAN JOAQUIN VALLEY AND WHITTIER-FULLERTON FIELDS

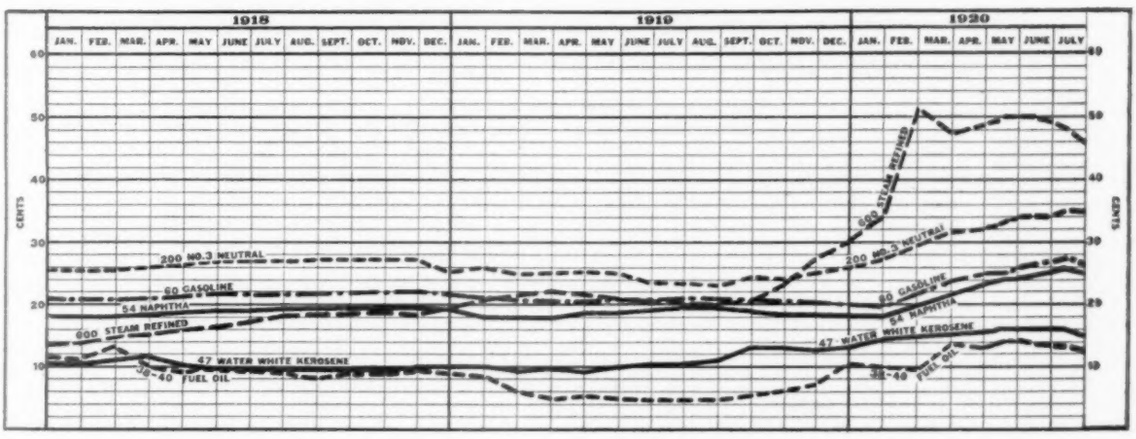
14 deg. to and including 17.9	$1.60 bbl.
18 deg. to and including 18.9	1.61 bbl.
19 deg. to and including 19.9	1.63 bbl.
20 deg. to and including 20.9	1.66 bbl.
21 deg. to and including 21.9	1.70 bbl.
22 deg. to and including 22.9	1.75 bbl.
23 deg. to and including 23.9	1.81 bbl.
24 deg. to and including 24.9	1.88 bbl.
25 deg. to and including 25.9	1.96 bbl.
26 deg. to and including 26.9	2.05 bbl.
27 deg. to and including 27.9	2.15 bbl.
28 deg. to and including 28.9	2.25 bbl.
29 deg. to and including 29.9	2.35 bbl.
30 deg. to and including 30.9	2.45 bbl.
31 deg. to and including 31.9	2.55 bbl.
32 deg. to and including 32.9	2.65 bbl.
33 deg. to and including 33.9	2.75 bbl.
34 deg. to and including 34.9	2.85 bbl.
35 deg. to and above	2.95 bbl.

Refinery Prices at Oklahoma Plants Through July, 1920*



*Quotation of 54-55 Naphtha is discontinued because little is available due to the deeper gasoline cut being made by refinery.

Refinery Prices at Pennsylvania Plants Through July, 1920



OIL FINANCE

Market Break Brings New Low Levels

A SUDDEN and unexpected break in the stock market early in the week caused liquidation of speculative holdings reaching large proportions. A series of selling waves sent prices down to new low levels. While the efforts of professionals were centered on Steel issues, the raid uncovered weaknesses in Railways, Industrials and Oils as well, and several well known issues of the latter class came under severe pressure. Among these were General Asphalt, Mexican Petroleum, Midwest Refining, Salt Creek Producers, White Oil, Shell Transport, and Simms Petroleum. Houston Oil was the spectacular performer in a series of declines and advances, involving a range of several points each way, caused by traders buying back stock sold in anticipation of a decline. The whole movement partook of a professional character, the public meanwhile holding off as has been the case for several weeks past. The credit situation continues tense, but much attention was given to the statement of Governor Harding, of the Federal Reserve Board, that conditions in the middle west are improving and that the broad outlook indicates the handling of the crops this fall without unusual strain. This of itself makes for easier money conditions, but it is hardly to be expected that money for speculative purposes will be available in any quantities for some time in the future. In this connection it may be noted that the steady outflow of gold from this country has been supplanted, at least temporarily, by a moderate net inward movement of the metal, and this in a measure relieves one source of pressure against credit facilities.

Financial Notes

Omaha Refining.—Stockholders recently voted an increase of capital to $3,000,000. Company has paid the two semi-annual 4 per cent dividends and in addition an extra 4 per cent stock dividend. New plans include doubling the capacity of the refinery in East Omaha, the addition of seven tank stations thruout Nebraska, and a pipe line from the Osage (Wyoming) field to the Burlington Railroad.

Anglo-American Oil.—The report for the year ended December 31, 1919, shows gross profits of $7,684,780 (basis of $4 to pound sterling), after providing for excess profits tax and depreciation. This compares with $6,591,628 gross profits in 1918. Balance to surplus after payment of 30 per cent dividends on $12,000,000 capital stock amounted to $1,206,716, making the total surplus $4,048,184. In connection with the issue of $15,000,000 notes last March, the company estimated gross profits for 1920 of $7,200,000 after deducting $1,500,000 for income tax and exchange and $1,200,000 for depreciation.

Atlantic Lobos Oil.—Consolidated balance sheet as of December 31, 1919, recently issued, shows total assets of $23,635,621, of which $3,600,794 were current, as against $682,613 current liabilities. The cash item was $611,590. Sundry assets were $1,010,228 and fixed assets $19,024,599, divided into $6,443,107 plant and equipment less depreciation and $12,878,827 oil lands and leaseholds less depletion. Sundry liabilities, aside from current, totaled $2,178,638. Capital account showed $10,000,000 preferred stock authorized and $2,470,000 issued; common stock, $15,789,268 authorized and $15,209,568 issued.

Choate Oil Corp.—Is offering at 98 to yield 8.5 per cent with five shares of capital stock $900,000 five-year 8 per cent sinking fund convertible gold notes due June 1, 1925. Average net earnings applicable to interest charges for the past five months are estimated at the rate of $880,000 a year.

Hoden Petroleum.—It is proposed that the capital of this Japanese company be increased from 20,000,000 yen ($10,000,000) to 40,000,000 yen ($20,000,000).

White Oil Earnings For First Quarter 1920

Net earnings of White Oil Corporation for the quarter ended June 30, 1920, before depletion, were $1,417,000, partly estimated. Crude oil production, net to the company after all deductions for royalties, other interest, etc., in the month of May was at an average daily rate of 5,508 barrels; in June, 5,502 barrels; and for the first fifteen days of July, 6,459 barrels. Total net production from May 1 to July 15 was 432,717 barrels.

"As production at present," President P. J. White states, "is considerably in excess of the average for the previous quarter, and as refinery operations have been materially increased, it is reasonable to estimate that the earnings for the third quarter will show substantially greater."

The company is operating 650 tank cars, soon to be increased to 850.

Since January 1, 1920, the corporation's interest in Crown Oil & Refining Company has been practically complete, the additional shares having been acquired thru issue of 45,771 shares of stock of the White corporation. The company has, since January 1, acquired 15,787 acres of leases at a cost of $1,419,133.19, and additional acreage is steadily being acquired. Its wells now number 178, with 47 drilling.

Pan-Amer.'s Earnings $12,500,000 For 1920

In connection with an offering of $10,000,000 first lien ten-year marine 7 per cent convertible gold bonds, dated August 1, 1920, due August 1, 1930, Pan American Petroleum & Transport Company presents an interesting array of facts which are herewith set forth in briefest form:

The present issue is secured by mortgage on a fleet of ten steel tank steamships aggregating 100,670 tons deadweight, providing marine transportation facilities for the Mexican Petroleum Company, Ltd., of Delaware, of whose total outstanding stock, Pan American owns 71 per cent. Pan American's outstanding stock at current quotations represents an equity of over $125,000,000. Upon completion of this financing the company will have no other mortgage or funded debt outstanding excepting purchase-money mortgages aggregating $2,550,063 upon steamships acquired from the United States Shipping Board. Its share capitalization (par $50) is: common $55,000,000 authorized, $50,062,200 outstanding; Class B common ($50 par), $70,000,000 authorized, $13,720,900 outstanding.

The consolidated net earnings of Pan American available for interest after all allowance for depreciation and Federal taxes, were $4,546,154 in 1917; $5,279,039 in 1918; and $6,796,594 in 1919. Based on the results of the first half of this year, President E. L. Doheny estimates that the consolidated net earnings for 1920 will exceed $12,500,000, or over 17 times the annual interest on the present bond issue. These bonds, which are offered at 94.50 and interest, yielding 7.80 per cent, are to be convertible at option of holder at any time into Class B common stock at $145 per share; that is, $2,900 principal amount of bonds for $1,000 par value of Class B stock. The bonds are surrounded by the usual safeguards as to insurance, sinking fund and tax provisions, etc.

Aetna Petroleum Corp. Merges 3 Refineries

Aetna Petroleum Corporation has been formed by the consolidation of the Republic Oil & Refining Company and the Eastland Oil & Refining Company. Aetna Petroleum's capital will be 2,000,000 shares of no par value, of which 800,000 shares will be issued for the properties being taken over, leaving 1,200,000 shares of unissued stock. The company will also have an issue of $2,000,000 notes to be used as additional working capital.

The new corporation's assets have been appraised at $7,672,000, comprising 41 producing wells, a 3,500-barrel refinery, 124 tank cars, together with a considerable number under lease. More than 20,000 acres of leases are owned by the new corporation.

The company plans to take over a refinery at Eastland to serve as a topping plant for its Ranger crude production, and also to install a system of filling stations in the larger southern cities. Officers: R. J. Stichter, president; James A. Jones, Jr., vice president; F. L. Fairbank, secretary; E. A. Elliott, treasurer.

Union Oil Of Cal. Sales Now At 60 Million Rate

Sales for the first six months of 1920, as reported by Union Oil Company of California, were $29,360,000, a 15 per cent increase over 1919. Profits, subject to depreciation and Federal taxes, were approximately $10,000,000 against $7,900,000 in 1919; provision for depreciation, depletion, drilling costs, etc., $3,650,000 against $2,400,000. Crude production totaled 4,175,000 barrels, an increase of 145,000 barrels. Oil in storage was reduced 1,600,000 barrels. "This draft on our stocks," says President W. L. Stewart, "accumulated during periods of low prices, has enabled us to maintain our profits in the face of the largely increased cost of crude oil, labor and materials altho as yet commensurate advances have not been made in the market prices of our products."

Capital expenditure for the six months period approximated $6,500,000. Current assets June 30, 1920, were $31,800,000, an increase over December 31, 1919, of $700,000. Current liabilities were $5,600,000, or less by $900,000 at the end of 1919. The proportion of current assets to current liabilities, it will thus be seen, was 5 to 1. Capital stock outstanding June 30, 1920, was $48,297,800. On June 15, 1920, stockholders voted an increase in authorized capital stock from $50,000,000 to $100,000,000. Surplus and operating reserves approximate $29,300,000.

Cities Service.—For the first six months of 1920 showed $12,743,299 gross, an increase of $1,980,481.03 over the first six months of 1919. After providing for all expenses, interest and other prior charges, there was a balance available for payment of dividends on the preferred stock of $11,425,581, a gain of $1,964,048 over the corresponding period of 1919, showing that for the first six months of the current year requirements for payment of preferred dividends were earned 4.95 times. For the first six months of 1920, the balance available for reserves, dividends on the common stock and surplus was $9,120,342, an increase of $1,720,184 over the first six months of 1919, equivalent to $45.66 a share a year on the common stock outstanding.

Dutch-Shell Group Joint Profits Reached $58,533,360 In 1919

Based on official reports just received by Joseph Walker & Son, New York, the following figures are not only of financial but of economic interest in view of the world-position occupied by the reporting companies, Royal Dutch Petroleum and Shell Transport & Trading:

Net profits: Royal Dutch, $40,240,000 against $29,020,000 the previous fiscal year. Shell Transport, $18,293,360 against $11,087,600.

Cash on hand: Royal Dutch, $11,865,000 against $26,135,000 (the lower figures not taking account of cash in transit); Shell, $3,043,692 against $549,760.

Capitalization: Royal Dutch issued will be at $128,936,000, including subscription rights. Shell, $77,145,848, including subscription rights; Dutch-Shell, $64,000,000; Bataafsche, increase $36,180,000.

Dividends: Royal Dutch, 45 per cent against 40 per cent; Shell, unchanged at 36 per cent, free of British income tax; Dutch-Shell group, $45,298,200 against $36,727,400.

Fleet: 544,669 tons at end of 1919 against 263,746. This does not include vessels chartered or controlled or some 400,000 tons of Mexican Eagle tonnage.

Production: 29.564,500 barrels against 27,920,000 barrels, exclusive of Russia and Rumania and Mexican Eagle, latter estimated at 14,670,000 barrels. Dutch East India production has risen from 11,926,000 barrels to 14,670,000 barrels. United States production (Roxana Company) was nearly 3,000,000 barrels. Shell of California produced 6,703,000 barrels. New Orleans refinery output is at rate of 5,000 barrels daily.

Pipelines: Capacity of Corona Petroleum Company in Mexico will be increased to 30,000 barrels a day and storage to 6,000,000 barrels.

Dividends Paid By 49 Leading Oil Co.'s On N. Y. Curb First 6 Months 1920

Company	Total Dividends Paid to July 1, 1920	Dividends Paid 1st Half 1920	Amt. per Share 1st Half 1920	Par Value
Anglo-American Oil	£4,200,000	£450,000	3 shillings	£1
Bigheart P. & R.	$ 369,533	$187,865	*$0.50	$10.00
**Borne Scrymser	370,000	.....	.....	100.00
Buckeye Pipe Line	20,100,000	800,000	4.00	50.00
Chesebrough Mfg., com	3,567,000	105,000	7.00	100.00
***Chesebrough Mfg., pfd	17,500	17,500	3.50	100.00
Continental Oil	4,620,000	270,000	5.00 and 200% stock	100.00
Crescent Pipe Line	1,980,000	90,000	1.50	50.00
**Cumberland Pipe Line	778,208	.....	.....	100.00
Dominion Oil	291,708	251,708	.60 and 10% stock	10.00
Elk Basin Cons.	900,000	300,000	.25	5.00
Eureka Pipe Line	10,999,984	350,000	7.00	100.00
***Federal Oil, com	234,300	234,300	.25 and 3% stock	5.00
Galena Signal, orig. pfd	2,960,000	80,000	4.00	100.00
Galena Signal, new pfd	840,000	240,000	4.00	100.00
Illinois Pipe Line	20,800,000	1,600,000	8.00	100.00
Imperial Oil of Canada	14,860,000	1,800,000	1.50	25.00
Indiana Pipe Line	9,300,000	600,000	6.00	50.00
International Pet., com	£3,132,502	£626,700	****.50	£1
Merritt Oil	$573,761	$90,007	$0.50	$10.00
Midwest Refining	11,087,049	1,869,783	3.00	50.00
National Transit	17,082,624	763,500	1.50	12.50
New York Transit	10,250,000	600,000	12.00	100.00
Northern Pipe Line	3,360,000	200,000	5.00	100.00
Ohio Oil	83,400,000	4,800,000	8.00	25.00
***Panhandle P. & R., pfd	160,000	160,000	4.00	100.00

Company	Total Dividends Paid to July 1, 1920	Dividends Paid 1st Half 1920	Amt. per Share 1st Half 1920	Par Value
Pennok Oil	$181,250	.....	.....	$10.00
Prairie Oil & Gas	28,080,000	$3,240,000	$18.00	100.00
Prairie Pipe Line	33,210,000	1,620,000	6.00	100.00
† Producers & Refiners, com.	396,478	396,478	.25	10.00
Sapulpa Refining	1,195,800	150,000	.25	5.00
Savoy Oil	664,000	36,000	.30	5.00
† Skelly Oil	300,000	300,000	.20	10.00
Solar Refining	3,200,000	200,000	†10.00	100.00
South Penn Oil	23,250,000	2,000,000	10.00	100.00
Southern Pipe Line	21,300,030	900,000	9.00	100.00
Southwest Penn P. L.	4,430,005	70,000	2.00	100.00
Spencer Petroleum	185,200	111,120	1.20	10.00
S. O. of Calif.	63,382,923	6,956,131	7.00	100.00
S. O. of Indiana	51,600,000	3,600,000	12.00	100.00
S. O. of Kansas	3,180,000	240,000	12.00	100.00
S. O. of Kentucky	9,110,000	360,000	6.00	100.00
S. O. of Nebraska	1,730,000	100,000	10.00	100.00
S. O. of New York	58,050,000	6,000,000	8.00	100.00
S. O. of Ohio	7,157,500	560,000	8.00	100.00
† Superior Oil	150,000	150,000	1.00	Nom.
Swan & Finch	968,800	.....	.....	$100.00
† Texas Chief	385,500	385,500	.90	10.00
Union Tank Car, com	4,260,000	420,000	3.50	100.00
† Union Tank Car, pfd	210,000	210,000	1.75	100.00
Vacuum Oil	10,050,000	750,000	5.00	100.00
† Woodburn Oil	146,000	146,000	.40	Nom.

—Courtesy of Jones & Baker, New York

† Initial dividend paid during first six months of 1920.
*Paid 25c in scrip, 25c cash.
**Payments made annually.
***Initial dividend paid during first six months of 1920.
****Also rights to subscribe to 100% new stock at $5.

How Oil Shares Moved Last Week

NEW YORK STOCK EXCHANGE

	Par Value	High 1920	Low 1920	Week's Sales	Price July 24	Week's High	Week's Low	Price July 30	Week's Gain or Loss
Caddo Oil & Refg	$100	28¼	15½	2,900	....	16½	14	14	.....
California Petroleum	100	46	26	1,700	30	.....	.....	28	—2
Mex. Petroleum	100	222	161	85,000	189½	191¾	176	180⅜	—8⅜
Middle States Oil	10	71¾	22¾	43,100	21	21	20½	20¾	—¼
Pure Oil Corp.	25	50⅜	37						
Okla. Prod. & Refg	5	5¾	3⅜	14,600	.....	4⅛	3⅞	3⅞	.....
Pan.-Amer. Petroleum	50	108¼	88⅛	104,000	101¾	102	92	95½	—6¼
Pierce Oil Corp.	25	23¾	15	7,200	.....	15	12¾	12¾	.....
Royal Dutch, N. Y.	13.15	123⅜	74	17,600	75½	76⅜	72⅜	73	—2½
Shell Transport	10	90¼	70½	8,600	70⅜	70½	65½	.....	.....
Sinclair Consol.	No par	48¼	28¾	79,200	30¼	30½	26	22⅝	—4⅝
Standard Oil, N. J.	100	850	625	Odd lots	641	645	638	640	—1
do. pfd.	100	113⅛	100⅛	4,900	105½	105	105⅝	105⅛	—⅜
Texas Company (new)	25	231	193	51,200	45¾	45¾	44	44	—1¾
Transcontinental Oil	No par	38¼	23⅛	14,600	14½	14½	12¾	13½	—1
Union Oil	No par	38	30½	4,900	31¼	.....	.....	29	—2¼

NEW YORK CURB MARKET

Cities Serv. Bkrs.	10	44⅛	35	2,350	35½	35½	33½	33¾	—1¾
Cosden & Co.	5	10¾	6⅜						
Elk Basin	5	11¾	7½	4,500	7¾	8	7¼	7½	—¼
Federal Oil	5	4¾	2½	11,100	2⅜	.....	.....	2½	+⅛
Glenrock Oil	10	3⅞	1⅜	7,200	2⅜	2⅜	2¼	2⅜	.....
Guffey-Gillespie	No par	39¼	26	1,700	.....	28¾	27½	27¾	.....
Intern. Petroleum	5	77	33½	1,600	.....	34	31	32	.....
Invinc. Oil & Refg	50	47	27						
Island Oil & Trans	10	8	4½						
Merritt Oil	10	22⅛	14	1,300	.....	15½	15	.....	.....
Midwest Refg.	10	180	121	6,450	160	162	151	151	—9
Pennok Oil	10	9½	5	100	.....	5¾	5¾	.....	.....
Prodrs. & Refrs.	10	10½	6¾	3,400	.....	6⅞	6⅝	6¾	.....
Sapulpa Refg.	5	7¾	5½	700	.....	5½	5⅜	.....	.....
Salt Creek Prod.	25	56	30½	3,900	36½	36⅜	34	.....	.....
Simms Petroleum	No par	73½	14	5,200	15½	.....	.....	14¾	—¾
White Oil	No par	50	17½	5,400	18¾	19¼	17¼	18¼	.....

PITTSBURGH STOCK EXCHANGE

Arkansas Nat. Gas	10	45	10	16,411	12¾	12¾	10	10¼	—2
Arkansas Nat. Gas. pfd.	100	150	92	No sales reported.					
Barnsdall Corp. A	25	50	39	No sales reported.					
Guffey-Gillespie Oil	No par	40	25½	1,760	28	28¾	27¾	27¾	—¼
Kay County Gas	1	2½	1½	1,350	1⅝	1¾	1⅝	1⅝	.....
Lone Star Gas	25	45½	25	590	28⅛	28⅜	28⅛	28¼	+⅛
Man. Light & Heat	50	61¾	48½	725	49⅞	50¼	48½	50¼	+⅜
Marland Refining	5	6½	4	2,642	4½	4½	4⅜	4½	.....
Ohio Fuel Oil	1	34⅜	22½	110	23	22½	22½	22½	—½
Ohio Fuel Supply	25	55	44	167	48¼	48½	48	48	—¾
Oklahoma Nat. Gas	25	43	31	792	31	31	30	30	—1
Oklahoma Prod. & Refg.	5	6½	4	No sales reported.					
Pittsburgh Oil & Gas	5	16	11	990	13¾	14	12½	12½	—1¼
Union Nat. Gas	100	130	117½	10	119	117½	117½	117½	—1½
Barnsdall Corp. B	25	46	36	200	38	37	36⅛	36⅛	—1⅜
Arkansas Gas rights	.....	5	1/16	34,168	1	1	1/16	1/16	—1/16

PITTSBURGH CURB MARKET

Allied Oil	1	1.25	.23	200	.25	.24	.23	.24	—1
Atlantic Gulf Oil	100	88½	79½	No sales reported.					
Boston-Wyoming	1	1.25	.62	300	1.12	1.12	1.12	1.12	.....
Columbia Syndicate	10	11	8¾	No sales reported.					
Duquesne Oil	5	7½	3¾	2,100	3⅞	3¾	3¾	3¾	—⅛
Homer Union Pet	1	1.25	.20	100	.20	.20	.20	.20	.....
Liberty-Texas	100	1.75	.65	No sales reported.					
Gulf Oil Corp.	100	475	400	No sales reported.					
Marshall Oil	10	13½	10	No sales reported.					
Mexico-Wyoming	1	1.45	.55	1,100	.68	.60	.60	.60	—8
Mountain & Gulf	1	1.40	.90	No sales reported.					
Omar Oil & Gas	10	7¼	3¼	100	3½	3½	3½	3½	.....
Salt Creek Consol	10	21	12	400	.....	12	12	12	.....
States Oil	5	160	125	No sales reported.					
Tropical Oil	25	23	16½	885	19	19¼	18	18	—1
Twin City Oil	1	.30	.13	7,850	.16	.15	.13	.13	—3
West Texas Oil	5	30	16	No sales reported.					

Standard Oil Stocks

Standard Oil securities are dealt with to only a small extent on the New York curb market, the great majority of sales being made over the counters of investment bankers. For this reason no record can be obtained of the total volume of sales from day to day to indicate the activity of any particular stock. Below are bid and asked quotations prevailing on the curb market at the close of business on the date given, the same quotations prevailing in the majority of unrecorded transactions:

STANDARD OIL GROUP

	July 30 Bid	July 30 Asked	1920 High	1920 Low
Anglo-American	20	21	31	19
Atlantic Refg.	1,125	1,175	1,650	†1,125
Buckeye Pipe	85	87	102	84
Continental Oil	115	125	(b) 575	530
Galena Signal	40	45	97	40
Illinois Pipe	153	158	178	100
Ohio Oil	280	285	395	270
Penn.-Mex	40	44	74	38
Prairie Oil & Gas	560	570	690	520
Prairie Pipe	193	198	280	190
South Penn	265	270	345	265
S. O. California	305	310	338	305
S. O. Indiana	655	665	760	640
S. O. Kansas	500	525	750	†500
S. O. Kentucky	370	390	485	350
S. O. New York	365	370	460	280
S. O. Ohio	425	450	560	420
Union Tank Car	115	120	115½	103
Vacuum Oil	370	380	435	330

(b) Before stock dividend. †New low.

UNLISTED SECURITIES

By Carl H. Pforzheimer & Co.

	Par Value	July 30 Bid	July 30 Asked	1920 High	1920 Low
Gulf Oil Corp.	$100	430	440	550	394
Humble O. & R.	100	240	260	323	240
Magnolia Pet.	100	340	360	450	†340
Tex. Pac. C. & O.	10	41¾	42	139	40¾

†New low. *Befpre stock dividend.

MISCELLANEOUS STOCKS

The following are bid and asked prices ruling at the close of business on the date given, on the stock markets indicated by reference marks, with high and low levels reached so far this year:

	Par Value	July 30 Bid	July 30 Asked	1920 High	1920 Low
Cities Serv. (a)	$100	299	303	....	....
do. pfd. (a)	100	64¾	65¼	74	64
Nat. Refg. (a)	100	211	....	*410	355
do. pfd. (a)	100	116	120	126	97
N. Am. O. & R. (b)	5	2½	2⅝	...	....
Paragon Refg. (a)	25	25¼	....	27½	25
do. pfd. (a)	100	....	97	100½	100
Ind. Rfg. (c)	5	7.00	7.25	....	....
Marland Refg. (c)	5	4.25	4.50	....	....

*Before stock dividend.